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UNDERSTANDING PROPERTIES OF THE UPIN FOR CLAIMS-BASED RESEARCH

Final Interim Report

Prepared for:

Health Care Financing Administration

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EXECUTIVE SUMMARY

1.0 INTRODUCTION

In response to a Congressional mandate (P.L. 99-272), the *Physician Registry* was established in 1989 by HCFA; and the administration of the Registry was contracted to Transamerica Occidental Life Insurance Company (TOLIC). The primary purpose of the Registry is to issue a Unique Physician Identification Number (UPIN) to each physician billing Medicare for services provided to its beneficiaries. This one UPIN should then be used by the physician during his/her entire lifetime association with the Medicare program.

Each Part B Medicare carrier had developed its own physician identification numbers (PINs) for their local billing and claims processing systems. In consequence, prior to the establishment of the Registry, there was not a unique national Medicare identification number for each Part B physician. (The term *physician*, for the purpose of Medicare payment, refers to medical doctors [including osteopaths], doctors of dental medicine and dental surgery, chiropractors, optometrists, and podiatrists.) The lack of a unique Medicare PIN meant that individual physicians could not be readily identified. The inability to uniquely identify physicians hindered HCFA's efforts to avoid duplicate Part B billings by interns and residents for services that were also paid as Part A hospital services to a teaching hospital. The lack of unique PINs also hindered efforts to detect fraud and abuse and to effectively conduct quality assurance studies. In addition to operational issues, studies of physician behavioral responses to Medicare policy changes were limited because individual physicians could not be reliably identified. UPINs were created in the expectation of overcoming these deficiencies.

The establishment of the Registry involved the coordination and integration of information from Medicare carriers. Starting in the late 1980s and finishing during the early 1990s, Medicare carriers were also required to enter into one of the new shared processing systems. These systems were designed to increase standardization of provider files and claims processing. In January 1994, HHS awarded the contract for design of the new Medicare Transaction System (MTS) to GTE Government Systems Corp. Operations are expected to begin in 1999. Thus, from a totally de-centralized claims-processing system serviced by 36 Part B carriers servicing nearly 60 geographic units in 1985, by 1999, when MTS is fully operational

claims-processing responsibility will be consolidated and standardized at considerable savings in administrative resources.

HCFA and HCFA-contracted studies, including those performed by Health Economics Research, Inc. (HER), have previously documented numerous deficiencies in Registry data, the apparent absence of performing and referring UPINs on claims, and the lack of consistency in the coding between data elements in the Registry file and in NCH data. Such deficiencies compromise the integrity of analyses that rely on UPINs and Registry data. While the recent retrospective editing of Registry data promises to alleviate some of the current concerns regarding the reliability of UPIN data, there is still concern that inconsistencies between the Registry file and NCH claims will remain.[1]

HCFA contracted with HER to extend and deepen HCFA's understanding of the quality of the Registry's data. Specifically, major tasks of this study are to:

- discover problems Peer Review Organizations (PROs) encounter when conducting studies relying on UPINs;
- in preparation for carrier interviews, document problems encountered when using Registry data in conjunction with Medicare claims data;
- collect carrier-maintained data in order to perform data validation studies;
- develop professional and practice profiles of low- and high-volume physicians to provide a contextual background with which to assess data collected directly from high-volume physicians;
- conduct interviews with carriers to extend HCFA's understanding of the impact of carrier operations on UPIN-related Registry and NCH data;
- perform studies of referring UPIN reporting;
- conduct interviews with state license boards to understand issues in working with license numbers and with the boards themselves to exchange information on physician credentials; and
- perform analyses on Registry data elements not hitherto examined and new analyses of Registry and claims data that rely on knowledge gained from the interviews and data collection efforts.

[1]During 1995 and 1996, HCFA instructed carriers to correct the deficiencies. This included obtaining valid values, for each physician's active practice settings, for those data elements with incorrect or missing values.

The results from the first, second, and fourth through fifth tasks are presented in this report. The results for the other tasks will presented in a subsequent (final) report.

The results from these analyses should be useful to operations personnel, administrators, policy-makers, and behavioral researchers. For instance, although the duties of existing carriers under MTS will change, carriers will still have an important role in Medicare payment and related operations. The interview results, then, with carriers, state licensing boards, and PROs should provide useful information to HCFA as it prepares to reallocate responsibilities for Medicare claims processing. Specifically, these results should help GTE and the new MTS contractor design better edits for both claims and Registry data in order to attain greater data accuracy and fewer inconsistencies than has hitherto been the case.

The analysis of referring UPIN reporting is another result that could be of interest to policy makers. For instance, clinical laboratory services, services that are often referred, are currently apportioned to nonsurgical services in the growth calculations for the Medicare Volume Performance Standards (MVPS). If HCFA deems current referring UPIN reporting sufficiently reliable for policy purposes, distributing clinical laboratory services on the basis of referring UPINs in place of current policy could affect MVPS limits. Changes in MVPS limits could also affect the distributive impact of the Medicare Fee Schedule (MFS).

2.0 INTERVIEWS WITH PRO STAFF

To help understand the limitations of UPINs as a research tool, staff from three Peer Review Organizations (PROs) were interviewed. Although the purpose of PROs is to conduct quality assurance and related studies on the provision of inpatient care, PROs are the only organizations, aside from Medicare Part B carriers and HCFA itself, that are obligated to work with UPINs.

The current use of UPINs by PROs is rather limited. The PROs merely verify that the UPIN information (mainly the UPIN itself) on the Part A claim corresponds to the physician in the medical record. The UPIN is not routinely used by PROs to link Part B claims to Part A claims during reviews of inpatient claims. Except for specially-funded studies, UPINs are not routinely used by PROs as a research tool. DELMARVA and PRO-West are among the few PROs with specially-funded projects that are also using UPINs to gather together all claims for each study physician. While DELMARVA was generally satisfied with UPINs, PRO-West experienced

many problems. In particular, PRO-West was extremely dissatisfied with the quality of the "UPIN" information and the long time lags in obtaining data from the carriers for Washington and Idaho. Since DELMARVA and PRO-West were unable to quantify the problems they had with UPINs, compared to other identifiers such as state license numbers, it is difficult to determine whether UPINs are, from the PROs' perspective, an improvement over other physician identifiers. It is clear, however, that PRO-West's experiences would have been improved had they understood, prior to the project's start, the carriers' role in the UPIN assignment process and the ability of carriers to provide to the PROs information on the physicians' personal, professional, and practice characteristics.

3.0 PRELIMINARY ANALYSES OF REGISTRY AND NCH PART B CLAIMS DATA

The primary purposes of the preliminary analyses were to document data patterns and problems and to develop background information to help guide the carrier interviews, the analysis of high-volume physicians, and the state licensing board interviews. The results may be of interest to other investigators in understanding the current limitations when using National Claims History (NCH) and Physician Registry data. The results may also be informative to GTE, the design contractor for the new Medicare Transaction System, and to contractors responsible for claims processing under MTS starting in 1999. The analyses and main results follow.

To determine the ability to link individual claims to specific practice settings in the Physician Registry, PINs found in 1992 claims data were compared to those in the 1993 Registry.

Key Findings

The main results were:

- it was not possible to develop an algorithm to match PINs found in claims data with Registry PINs for six carriers representing nine states or coverage areas;
- there were 24 carriers with non-match rates exceeding ten percent;
- South Carolina BC/BS had the highest non-match rate at 74 percent;
- all of the claims' PINs could be found in the Registry for only two carriers;

- for those claims for which a PIN could be found in the Registry, the match rate for the combined UPIN/PIN identifiers was usually equal to 100 percent between the two data bases.

Interviews conducted with carriers in 1993 revealed problems they had in maintaining up-to-date provider files.[2] An obvious concern is whether the activity status recorded in each practice setting in the Registry correctly reflects the setting's Medicare activity status. To test this, dates on 1992 claims were compared to the activity status of practice settings found in the 1993 Physician Registry (when there was a PIN/UPIN match). Methods and findings included:

- the last expense date on claims was compared to:
  - the date the setting record was added for "active" practice settings or
  - the date the setting record was de-activated for "inactive" practice settings;
- of the claims analyzed for 30 carriers:
  - both of Nationwide Insurance Company's two areas had discrepancy rates greater than 20 percent and California BS had a discrepancy rate of 6.2 percent;
  - five other carriers had discrepancy rates between 2 and 3.4 percent; and
  - 22 carriers had discrepancy rates of less than one percent.

To help provide contextual background information for an investigation of high-volume physicians, the professional and patient characteristics of physicians were tabulated and classified by the physician's volume during 1993. The results of the analysis were also used to help develop questions about difficulty in maintaining up-to-date provider records for the carrier interview protocol. Physician volume was defined on the basis of the number of line items. The main findings were:

- in contrast to low-volume physicians, high-volume physicians were less likely to be over age 70 and more likely to practice in primary care specialties; and

[2]Health Economics Research, Inc. *Unique Physician Identification Number (UPIN) Validation Studies. Final Report.* HCFA Master Contract No. 500-92-0020, Delivery Order No. 5, February 7, 1995.

- in contrast to low-volume physicians, high-volume physicians had an older mix of patients, were more likely to order diagnostic laboratory services, were more likely to provide services in an office setting, and were more likely to have performed the services as a result of a referral.

Both of these analyses are subject to data limitations. The physician characteristics depend on a proper crosswalk between carrier-issued PINs and UPINs, a problem discussed above. The second analysis depends on the proper identification in the claims record of both the performing and referring physicians, a problem discussed in Chapter 5.

Anecdotal information from HCFA and other sources suggested that there might be problems with the state license number data element in the Physician Registry. If the state license numbers in the Physician Registry are reliable, then linkage of Medicare UPIN and claims data to other data bases, such as the National Practitioner Data Bank, might be feasible. We documented the existence and extent of potential problems in the 1994 Registry, by carrier. The results were used during the carrier interviews and will be used in the interviews with state license boards and a re-examination, following the latter interviews, of state license numbers found in the Registry. Methods and main results included:

- several carriers used bogus physician license numbers when unable to obtain the actual number;
- discrepancy rates, as deviations from ideal circumstances, were based on:
  - an average of more than one UPIN as combination of state code and state license number or less than one UPIN per combination of state code and state license number
  - more than one state license number per UPIN within a carrier/state combination;
- Minnesota BC/BS had the highest discrepancy rate at 23 percent - they are no longer the carrier for "rural" Minnesota;
- seven carriers had discrepancy rates between 5 and 14 percent while 13 carriers had discrepancy rates less than one percent;
- subsequent carrier interviews suggest that parallel numbering systems within states might account for many of the observed discrepancies - this possibility will be tested during the second half of the project.

The analyses of claims and Registry data uncovered several problems, most particularly with the carrier-assigned PINs. While it is not currently possible to link all of the claims to the practice settings from which they originated, it is not possible to determine from the analyses whether performing UPINs were incorrectly attached to claims. Many analyses are, thus, still feasible if they do not require practice setting level information. In addition, at the instigation of HCFA's Bureau of Program Operations (BPO), the carriers and TOLIC have been engaged in a retroactive clean-up of Registry data. It is thus possible that data from 1996 and 1997 will be substantially better than in previous years. The analysis of state license numbers is exploratory and although possible problems were identified, they might be resolved through interviews with carrier and state licensing boards.

4.0 CARRIER INTERVIEWS

The ultimate purpose of the information gained through the carrier interviews is to understand the current limitations of Registry and claims data in supporting analytical studies and to provide HCFA and its claims processing contractors an overview of current carrier operations and their association with data problems. The carrier interviews were motivated by several factors. These include the results of HER's previous analysis of Registry data, topics not thoroughly covered during the interviews conducted as part of HER's previous analysis of Registry data (e.g., claims processing),[3] and new problems documented in Chapter 3 of the current report. The goal of the interviews was to better understand (1) why inaccurate physician information is found in the Registry, and (2) how inconsistencies can arise between Registry and Medicare claims data. The focus of the interviews was on the maintenance of carrier provider files, claims processing, and the interaction between the provider files and claims processing. In addition, carrier responses to direct queries regarding specific data problems and puzzles found during the course of the preliminary analyses were obtained. Interviews with seven carriers were initially conducted from February through March 1996. Follow-up discussions with the carriers continued through May 1996.

The carriers were generally very receptive in agreeing to the interview requests and coordinated their staff to meet scheduled times. However, due to time constraints and carrier

[3]Ibid.

obligations, we were unable to interview the appropriate carrier personnel in some instances. Also, several carriers cited that there have been operational and procedural changes made since the data analysis time period, as well as major staff turnover. Therefore, some carrier practices may have changed between the period from which we obtained our data (1992 through 1994) and period in which the interviews were conducted (Spring 1996). Staff turnover also might have affected the quality the information obtained though the interviews since some of the current personnel lack historical knowledge of the organization.

Key Findings

Several key findings resulted from the carrier interviews. Following are the key findings relevant to data quality and analytical issues:

- errors can arise in the provider file and, hence, in the Physician Registry because:
  - online edits during data entry are typically used to only check the data format and
  - post-entry data edits are typically performed on random samples rather than on all new or changed records;
- PINs of performing physicians are not checked to verify that the proper PIN for the physician was entered on the claim;
- some states have parallel state license numbering systems for each physician type; this practice, thus, gives the impression that a given license number is assigned to more than one physician;
- Xact (Pennsylvania BS) may re-assign, after six months, de-activated PINS previously issued to solo practitioners – the other interviewed carriers did not mimic this practice; and
- carriers vary considerably in their criteria for establishing practice settings in their provider files and in the information transmitted to the Physician Registry.

During claims processing:

- carriers will often accept claims for services provided well before the establishment of a practice setting in their provider file. The carriers do this only if, at the time that the claim is actually submitted to the carrier, at least one other practice setting has been established for the physician.

- The interviewed carriers do not maintain distinct PIN-to-UPIN crosswalks separate from the provider file. Performing UPINs and other data elements (e.g., primary specialty) are attached to claims directly from the provider file during claims processing.

- Occasionally Part A claims are inadvertently processed as Part B claims. This results in claims' PINs that can not be found in the Physician Registry.

- Some carriers send "internal" PINs to the Registry. These internal PINs, however, are not used for billing purposes by physicians and thus do not appear in Medicare claims data.

Implications

The above findings have important consequences for researchers using Physician Registry data either separately or when used in conjunction with Medicare claims data. For instance, because of carrier variation in the establishment of multiple practice settings on the Physician Registry, reliable counts of the number of offices maintained by physicians can not be obtained. The practice of some carriers of establishing multiple practice settings on the Physician Registry, but only issuing one billing PIN to physicians can cause problems for researchers. In such situations, it is not clear which of the "practice settings" is the source of data elements (e.g., specialty) that are crosswalked from the provider file to claims. Similarly, the activity status of a practice setting on the Physician Registry can not be verified by independent researchers by checking for the existence of claims data in such situations. The claims data would not permit the differentiation of practice sites.

Because of Xact's practice of re-assigning PINs, researchers can not use PINs by themselves to locate a specific practice setting in the Physician Registry, a UPIN/PIN combination should be used instead. Further, re-assignment of PINs means that crosswalks derived from carrier provider files might not be as useful to researchers as they could be since the crosswalk file is unlikely to have both UPIN/PIN combinations. Some claims, thus, would not be able to be linked to the Registry. The problem of multiple UPINs per state license number may be reduced through combining physician credentials with the license number when conducting research based on license numbers.

An important finding was that carriers do not verify that performing PINs recorded on the claim belong to the physician or group submitting the claim. This practice may allow

fraudulent claims to avoid discovery by carriers during claims processing. At the very least, this practice can hinder fraud and abuse investigations conducted by carriers and HCFA.

Since HCFA's guidelines regarding the establishment of practice settings seems open to interpretation, HCFA may want to reconsider revising its guidelines to reduce variation in carrier practices. The upcoming commencement of operations of the new Medicare Transaction System (MTS), scheduled for 1999, may provide HCFA with an opportunity to review, revise, or clarify its rules.

5.0 ACCURACY AND COMPLETENESS OF PART B REFERRING UPIN REPORTING

The rate of increase of the MVPS is one the factors the Secretary of the Department of Health and Human Services (DHHS) may consider when updating the MFS and its components. Clinical laboratory services, services that are often referred, are currently apportioned to nonsurgical services in the growth calculations for the MVPS. Complaints regarding MVPS spending limits (*American Medical News*, April 17, 1995) might have prompted the DHHS Secretary to consider changes in the treatment of clinical laboratory services so that they are equitably apportioned to surgical, nonsurgical, and primary care specialty groupings. One possible apportionment method is based on each specialty grouping's share of overall expenditures. A different method, which might result in different shares for each specialty grouping, could be based on the specialty grouping to which a referring/ordering physician belongs.

The feasibility of using the specialty grouping of referring/ordering physicians depends on the accuracy and completeness of Part B referring UPIN reporting. If reliable, the referring UPIN could be used to analyze the consequences of potential revisions in the MVPS. Aside from public policy concerns, studies of physician practice patterns also rely on the accuracy and completeness of Part B referring UPIN reporting. Another application is in identifying referring physicians for purposes of determining the payment jurisdiction covering a lab specimen. HCFA is in the process of writing regulations tying payment to the State of the physician drawing the specimen.

Key Findings

The reporting of referring UPINs on Medicare claims improved dramatically between the first quarter of 1992 and 1993. Since the CWF edit policy only became effective on January 1, 1992, it is not surprising that the 1993 data shows great improvement in referring UPIN reporting. About 77 percent of all line items had a valid referring UPIN present and, including self-referrals, about 98 percent of the line items subject to CWF edit policy had a valid referring UPIN.

Other key findings include:

- There was significant variation in the referring UPIN reporting rate by carrier with Aetna (Hawaii) the lowest at 47 percent and Pennsylvania BS (Delaware) the highest at 95 percent. Additionally:
  - invalid referring UPIN reporting rates varied from 4.6 percent for Transamerica Occidental (Southern California) to 0.03 percent for Aetna (Hawaii); and
  - the use of surrogate UPINs ranged from 2.41 percent for Pennsylvania BS (Pennsylvania) to 0.05 percent for Arkansas BC/BS (Arkansas).
- Over 90 percent of supplier claims had a referring UPIN compared to 70 percent of the claims submitted by physicians.
- About 76 percent of the claims submitted by physicians practicing in groups had referring UPINs compared to 65 percent for solo practitioners.
- Claims submitted by specialists that would be expected to receive the most referrals tend to have the highest referring UPIN reporting rates. The overall rates was 74 percent and there was considerable variation across the 91 specialties:
  - 21 specialties had referring UPIN reporting rates over 90 percent;
  - 13 specialties had referring UPIN reporting rates between 80 and 90 percent;
  - 16 specialties had referring UPIN reporting rates less than 50 percent; and
  - hospital-based physicians (radiologists, anesthesiologists, and pathologists) all had referring UPIN reporting rates less than 5 percent.
- The referring UPIN reporting rate varied considerably by HCFA type of service:

- The overall reporting rate was 100 percent or nearly 100 percent for 6 types of service (all subject to the CWF edit policy):

  - purchase of DME (installment basis);
  - diagnostic radiology;
  - diagnostic laboratory;
  - consultation;
  - rental of DME; and
  - used DME.

- Of the four types of services with the most line items, medical care and surgery both had about a 60 percent referring UPIN reporting rate (diagnostic radiology and diagnostic laboratory are the other two services among the four with the most line items).

- The referring UPIN reporting rate varied considerably by the Berenson-Eggers type of service:

  - The overall referring UPIN reporting rate varied from nearly 100 percent for laboratory services to about 16 percent for chiropractic services.

  - For some of the major categories (e.g., laboratory services), there is little variation among the sub-categories while for other major categories (e.g., major procedures), there is considerable variation among the sub-categories.

- The distribution of claims by the specialty of the referring physician showed that 36 percent of all claims came from multi-specialty physicians and 22 percent from internists (internal medicine specialty). A disproportionately high share of referrals originated from internists while a disproportionately low share originated from optometrists, pediatricians, psychiatrists, oral surgeons, obstetricians/gynecologists, and chiropractors.

The presence of an UPIN on a claim that could also be found in the Registry does not guarantee that a referral had been made. As an additional data integrity check, a search (trace) of claims was performed for valid referring UPINs (other than self-referred) to determine whether the referring physician had provided care/services to the referred patient. The key findings were:

- The overall trace rate for all line items was 77 percent (the trace rate indicates the percentage of referring physicians that also provided care to referred patients).

  - For those line items subject to the CWF edit policy, the trace rate was 82 percent compared to the 74 percent for non-edited line items.

- DME had a trace rate that was about 5 to 7 percentage points lower than for the other line items subject to the CWF edit policy.

- The trace rate varied by the HCFA type of service, for those services with at least 25,000 line items, from 91 percent for therapeutic radiology to 78 percent for medical care.

- The trace rate varied by the specialty of the physician who accepted the referral:

  - The 90-day trace rate[4] for claims submitted by physicians specializing in diagnostic radiology and from individual billing clinical laboratories was greater than 81 percent;

  - The total trace rates for pathologists and anesthesiologists were about 90 percent; and,

  - The total trace rates for primary care physicians (general practice, family practice, and internal medicine) ranged from 54 percent to 69 percent.

- Overall trace rates varied by carrier with Aetna (Hawaii) having the highest at 88.5 percent and Group Health Insurance (New York) having lowest at 61 percent.

- The overall trace rate did not vary by the assignment status of the referral claim.

Implications

With nearly 99 percent of the diagnostic laboratory line items having a valid referring UPIN, these results, in the first instance, suggest that it might be possible to allocate clinical laboratory services on the basis of the referring UPIN. Before adopting such a policy change, however, further studies on physician specialty and variation in referring UPIN reporting may be warranted. Although physician specialty, *per se*, was not the subject of a comprehensive analysis, nearly 36 percent of the claims which had a valid referring UPIN (not self-referred) were associated with physicians with more than one specialty. Further analysis of multi-specialty physicians would reveal whether the specialties are within or cut across the primary care, surgical, and non-surgical specialty groupings used for MVPS limits.

There was significant variation in referring UPIN reporting by carrier that can not be explained by the current analysis. Additionally, the overall trace rate was only 83 percent for

[4]A claim from the referring physician was found within 90 days of the referral claim.

laboratory and radiology line items. This rate might not be sufficiently high to justify a change in current MVPS policy in the treatment of clinical laboratory services. While plausible explanations can be put forth to account for the observed variation, only some of them can be directly examined using claims data. For instance, variation in UPIN reporting rates across carriers might be due to variation in their particular mix of services subject to CWF edit policy. One possible reason that trace rates are less than 100 percent for some services such as medical care is because of continuing care. That is, physicians that are providing care to referred patients for an extended period of time continue to insert the original referring physician's UPIN on the claim long after the original referral (e.g., 11 months afterwards). This *continuing care* hypothesis used to explain the absence of the referring physician's UPIN as a performing UPIN, however, may not be testable using claims data.

1.0 INTRODUCTION

In response to a Congressional mandate (P.L. 99-272), the *Physician Registry* was established in 1989 by HCFA; and the administration of the Registry was contracted to Transamerica Occidental Life Insurance Company (TOLIC). The primary purpose of the Registry is to issue a Unique Physician Identification Number (UPIN) to each physician billing Medicare for services provided to its beneficiaries. This one UPIN should then be used by the physician during his/her entire lifetime association with the Medicare program.

Each Part B Medicare carrier had developed its own physician identification numbers (PINs) for their local billing and claims processing systems. In consequence, prior to the establishment of the Registry, there was not a unique national Medicare identification number for each Part B physician. (The term *physician*, for the purpose of Medicare payment, refers to medical doctors [including osteopaths], doctors of dental medicine and dental surgery, chiropractors, optometrists, and podiatrists.) The lack of a unique Medicare PIN meant that individual physicians could not be readily identified. The inability to uniquely identify physicians hindered HCFA's efforts to avoid duplicate Part B billings by interns and residents for services that were also paid as Part A hospital services to a teaching hospital. The lack of unique PINs also hindered efforts to detect fraud and abuse and to effectively conduct quality assurance studies. In addition to operational issues, studies of physician behavioral responses to Medicare policy changes were limited because individual physicians could not be reliably identified. UPINs were created in the expectation of overcoming these deficiencies.

The establishment of the Registry involved the coordination and integration of information from Medicare carriers. Starting in the late 1980s and finishing during the early 1990s, Medicare carriers were also required to enter into one of the new shared processing systems. These systems were designed to increase standardization of provider files and claims processing. In January 1994, HHS awarded the contract for design of the new Medicare Transaction System (MTS) to GTE Government Systems Corp. Operations are expected to begin in 1998. Thus, from a totally de-centralized claims-processing system serviced by 36 Part B carriers servicing nearly 60 geographic units in 1985, by 1999, when MTS is fully operational claims-processing responsibility will be consolidated and standardized at considerable savings in administrative resources.

HCFA and HCFA-contracted studies, including those performed by Health Economics Research, Inc. (HER), have previously documented numerous deficiencies in Registry data, the apparent absence of performing and referring UPINs on claims, and the lack of consistency in the coding between data elements in the Registry file and in NCH data. Such deficiencies compromise the integrity of analyses that rely on UPINs and Registry data. While the recent retrospective editing of Registry data promises to alleviate some of the current concerns regarding the reliability of UPIN data, there is still concern that inconsistencies between the Registry file and NCH claims will remain.[1]

HCFA contracted with HER to extend and deepen HCFA's understanding of the quality of the Registry's data. Specifically, major tasks of this study are to:

- discover problems Peer Review Organizations (PROs) encounter when conducting studies relying on UPINs;
- in preparation for carrier interviews, document problems encountered when using Registry data in conjunction with Medicare claims data;
- collect carrier-maintained data in order to perform data validation studies;
- develop professional and practice profiles of low- and high-volume physicians to provide a contextual background with which to assess data collected directly from high-volume physicians;
- conduct interviews with carriers to extend HCFA's understanding of the impact of carrier operations on UPIN-related Registry and NCH data;
- perform studies of referring UPIN reporting;
- conduct interviews with state license boards to understand issues in working with license numbers and with the boards themselves to exchange information on physician credentials; and
- perform analyses on Registry data elements not hitherto examined and new analyses of Registry and claims data that rely on knowledge gained from the interviews and data collection efforts.

The results from the first, second, and fourth through fifth tasks are presented in this report. The results for the other tasks will presented in a subsequent (final) report.

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[1]During 1995 and 1996, HCFA instructed carriers to correct the deficiencies. This included obtaining valid values, for each physician's active practice settings, for those data elements with incorrect or missing values.

The results from these analyses should be useful to operations personnel, administrators, policy-makers, and behavioral researchers. For instance, although the duties of existing carriers under MTS will change, carriers will still have an important role in Medicare payment and related operations. The interview results, then, with carriers, state licensing boards, and PROs should provide useful information to HCFA as it prepares to reallocate responsibilities for Medicare claims processing. Specifically, these results should help GTE and the new MTS contractor design better edits for both claims and Registry data in order to attain greater data accuracy and fewer inconsistencies than has hitherto been the case.

The analysis of referring UPIN reporting is another result that could be of interest to policy makers. For instance, clinical laboratory services, services that are often referred, are currently apportioned to nonsurgical services in the growth calculations for the Medicare Volume Performance Standards (MVPS). If HCFA deems current referring UPIN reporting sufficiently reliable for policy purposes, distributing clinical laboratory services on the basis of referring UPINs in place of current policy could affect MVPS limits. Changes in MVPS limits could also affect the distributive impact of the Medicare Fee Schedule (MFS).

The findings of the PRO and carrier interviews are presented in Chapters 2 and 4, respectively. The "preliminary" analyses of Registry and claims data are presented in Chapter 3. The analysis of referring UPIN reporting is presented in Chapter 5.

2.0 PEER REVIEW ORGANIZATIONS' EXPERIENCE WITH UPINS

To help understand the limitations of UPINs as a research tool, staff from three Peer Review Organizations (PROs) were interviewed. Although the purpose of PROs is to conduct quality assurance and related studies on the provision of inpatient care, PROs are the only organizations, aside from Medicare Part B carriers and HCFA itself, that are obligated to work with UPINs.

Based on their proximity and willingness to conduct an on-site interview, the Massachusetts Peer Review Organization (MassPRO) was selected for the first interview. MassPRO reviews all inpatient Medicare services (Part A claims) rendered in the state of Massachusetts. It became clear with the MassPRO interview, as described below, that UPINs are not usually used by PROs as a tool in their reviews and studies. The PROs, rather, merely verify that the UPIN information (mainly the UPIN itself) on the Part A claim corresponds to the physician in the medical record. It was, thus, decided to purposely select PROs for the remaining two interviews that had or were conducting non-routine research that involved the use of UPINs and Part B claims. Following leads provided by MassPRO and HCFA Regional Officers, the other two PROs that were interviewed were: DELMARVA, which reviews Medicare services for the states of Virginia, Maryland, Delaware, and for the District of Columbia and PRO-West, which reviews Medicare services rendered in the states of Alaska, Idaho, and Washington.

In the next two sections, the mission and standard duties of PROs are briefly reviewed. The third section describes DELMARVA's and PRO-West's experiences in using UPINs as a research tool. This is followed by a short summary of the key findings of the PRO interviews.

2.1 Peer Review Organizations' Mission

Peer Review Organizations (PROs) are groups of practicing physicians and other health care professionals who contract with HCFA to review inpatient services reimbursed by Medicare. PROs ensure that:

> (1) Medicare pays only for services that are "reasonable" and "medically necessary," as well as eligible for coverage under the Medicare statute; (2) the quality of such services meets professionally recognized standards of health care, and; (3) the items and services covered could not, consistent with the

provision of appropriate medical care, be effectively provided more economically on an outpatient basis or in a different type of inpatient facility. (Medicare and Medicaid Guide 1988)

The PROs' scope of work has continuously evolved since their inception with the creation of the Medicare Prospective Payment System (PPS) for hospitals. PROs, initially, focused primarily on provider/physician errors that they found during reviews of small samples of randomly selected Part A Medicare claims. In the most recent contractual round with PROs (Round 4), HCFA has shifted the emphasis of quality assurance programs from a disciplinary focus to improving the quality of care rendered. Specifically, the PROs' scope of work currently focuses on collaborative efforts with hospitals, physicians, and other providers to improve the overall quality of care. Since PROs have operated under the current scope of work since 1993, our focus is on current PRO duties and obligations.

2.2 Standard Contractual PRO Duties

As part of their contractual duties, all PROs are required to perform quality assurance reviews. These reviews include the following steps: (1) verification that the inpatient care could not have occurred on an outpatient basis; (2) validation of demographic and physician identification number information; (3) verification of the accuracy of diagnosis/procedure codes and DRG assignment; (4) determination that the quality of care has been appropriate; and (5) determination of the medical necessity, reasonableness, and appropriateness of the services. All information pertaining to quality assurance reviews is obtained from patients' medical records, copies of paid claims from fiscal intermediaries, and Part A claims provided by HCFA. This review process does not involve Medicare Part B claims.

Another duty performed by PROs is physician profiling. The process of physician profiling refers to determining physician practice patterns. (For instance, finding the percentage of cardiologists' patients who have CABGs within three months of the date the cardiologist first sees the patient.) Another type of profile would be for a PRO to identify hospitals with higher-than-average mortality rates. Further PRO investigations can then determine the incidence of the most common diagnosis codes associated with these rates.

Similar to the PROs' overall scope of work, the physician profiling process has also evolved over time. Prior to 1993, all PROs were required to perform physician profiling. With

the creation of the Health Care Quality Improvement Program (HCQIP), the focus of PRO reviews changed from examining individual clinical errors to assisting providers in collaborative efforts to improve the quality of health care services. MassPRO has discontinued physician profiling, whereas both DELMARVA and PRO-West stated that, although it occurs to a much less extent than in the past, some PROs still conduct profiling.

Because the PRO's scope of work is constantly changing, the role of the UPIN has varied accordingly. Since its inception in 1989, the role of the UPIN has been, and continues to be, one of relative unimportance during the inpatient quality assurance review and the physician profiling process. During these activities, the UPIN is not used as a mechanism to link Part B claims with physicians. Rather, PROs merely verify that the UPIN information on the Part A claim corresponds to the physician in the medical record. If a discrepancy exists, the PRO will conduct a search to identify the correct physician UPIN. In addition, if the UPIN is missing from the data, the PRO will identify the UPIN to complete the record. PROs often rely on carriers to help find missing UPINs. Although the three PROs all indicated there were few cases with missing UPINs on the Part A claim or incorrect Part A UPIN information, none of the PROs were able to quantify the extent of the problems. The PROs, also, were not able to provide reasons for the existence of the problems.

2.3 Special PRO Research Projects Relying Upon UPINs

PROs sometimes undertake special projects in addition to their standard contractual quality assurance obligations. These projects are typically performed under contract to HCFA and sometimes use Part B data. These special studies include DELMARVA's *AQUIP* project and the *Idaho Mammography Study* conducted by PRO-West.

The *AQUIP* project identified the primary care physician of diabetic patients. This process relied heavily upon UPINs extracted from National Claims History (NCH) data which was directly provided by HCFA to DELMARVA. A UPIN cross-walk was then created in order to match a UPIN to the physician on the claim.

The *Idaho Mammography Study* identified the practice areas of physicians performing mammography services in the state of Idaho. First, PRO-West created their own UPIN file containing demographic and practice information on over 400 physicians. Next, PRO-West

identified the primary care physician of mammography patients. Once the primary care physician was identified, the UPIN was used to determine the practice area of performing physicians.[1] In addition to identifying physician practice areas, UPINs were also used to create physician utilization rates.

UPINs were used as an instrument to link Part B claims to individual providers/physicians for both projects. Both PROs noted that UPINs were an important foundation for project work *after* the creation and maintenance of their own UPIN database. The carriers were unable to supply current and accurate physician information such as personal and practice characteristics. By creating and maintaining their own UPIN database for a project, the PROs had the ability to ensure accurate and updated physician information.

The two PROs had high expectations for the UPIN, believing that the UPIN would be a powerful instrument to aid in the profiling process and potential project work. The PROs expected to link Part B claims to a specific physician or physician specialty by using UPINs. They also expected UPINs to overcome the major weakness of license numbers, specifically the issue that physicians who practice in multiple states have several different license numbers. This was a significant problem for DELMARVA, as it reviews physicians practicing in several states of close proximity.

The PROs' actual experience in using UPINs as a research tool is as follows. Many of the UPIN problems seem to originate, at least from PRO-West's standpoint, at the carrier level. PRO-West noted there was a lack of cooperation on the part of the carriers regarding updated UPIN file information. In some cases, the carrier was unresponsive to PRO-West's requests for UPIN information. Other times the requested UPIN information was outdated or incorrect. For example, PRO-West stated that they had not received hard copy UPIN information in the past year from either of their two contracted carriers, CIGNA (Idaho's carrier) and Aetna Life Insurance Company (the carrier for Washington and Alaska).

Several issues were addressed by the PROs regarding concerns with the UPIN. As the PROs noted, UPINs have some of the same problems that state license numbers and PINs present. Over the course of their work, PROs have encountered UPIN inaccuracies, multiple physicians assigned to one UPIN, as well as physicians having more than one UPIN. They did

[1] A *performing* physician is the physician who actually performs a procedure on a patient or otherwise renders care to the patient.

not, however, indicate the relative incidence of such problems with UPINs compared to other identifiers.

PROs specifically cited difficulties with the use of a single UPIN by more than one physician.[2] These so-called "group UPINs" hinder PRO tasks because they associate several physicians to a service, instead of identifying the actual physician who referred or performed the service. Without referring to the medical report, there is no accurate way to distinguish which physician performed or referred the service rendered. As a consequence of this inappropriate use of UPINs by group practices, physician practice profiles for physicians in group practices will be incorrect. Too many services, thus, will be associated with the physician to whom the UPIN is assigned while too few services will be associated with the physicians actually rendering care to patients. In addition to the incorrect quantity of services attributed to physicians, the distribution of services provided by individual physicians are also likely to be wrong.

Another problem of note is surrogate UPINs. This occurs when a non-specific UPIN is assigned to a physician specialty, such as PH00 or PH01[3] to indicate public health physicians. As noted by PRO-West, this problem arises in the quality assurance reviews of Alaska's public health physicians. Similar to group UPINs, surrogate UPINs make the review process extremely difficult because PROs cannot determine which physician referred the service. PRO-West, unfortunately, was unable to quantify the extent of surrogate UPIN usage and was unable to indicate how often surrogate UPINs hindered their efforts to associate claims to specific physicians.

There seems to be some confusion among PROs regarding how carriers obtain UPIN information. Some PROs think the carriers are obtaining UPIN information from the Registry, while, at the other extreme, others seem to think the carriers themselves are creating UPINs. This lack of understanding has led some PROs to question the carriers' competence and the usefulness of UPINs.

Although the PROs had high expectations for the UPIN, their experience in using UPINs was mixed. MassPRO felt indifference towards the UPIN because they have not undertaken

[2]Actual group UPINs were issued for the first time in January, 1995. Here, we use the term "group UPINs" to indicate inappropriate use of one UPIN by a physician group prior to 1995.

[3]Pro-West stated that these UPINs were used by physicians, the format, however, of these UPINs is invalid.

any project work that might use UPINs. In their work, UPINs are strictly used as physician identifiers. They did not foresee or expect any change in the UPIN's function. DELMARVA found UPINs to be extremely useful as a research tool. DELMARVA's positive experiences using UPINs and Part B data may be due to their prior participation in the *Developing and Evaluating Methods to Promote Ambulatory Care Quality* (DEMPAQ) project. This 1990 HCFA-funded project matched claims-based diagnoses with those in the primary-care physician's medical record. DELMARVA undoubtedly benefited from their collaborators' (Johns Hopkins University and Harvard University researchers) experience in working with Part B data.

On the other hand, PRO-West, for the most part, was dissatisfied with the UPIN and the quality of UPIN data, specifically, its accuracy and currentness. Unlike DELMARVA, PRO-West did not have any prior experience using UPINs or Part B data. Furthermore, PRO-West believes that UPINs are created and distributed at the carrier level, when in fact, UPINs are assigned and maintained at the Physician Registry. This lack of experience and misunderstanding of UPINs likely contributed to PRO-West's dissatisfaction with the UPIN.

2.4 Summary

Overall, the role of UPINs in PRO operations has varied greatly. During the quality assurance review, the UPIN is only used to verify that the physician UPIN on Part A claims corresponds to the physician in the medical records. There is, however, increased interest by PROs to use the UPIN as a research tool. By participating in HCFA-funded projects, selected PROs are just now starting to discover the capabilities of the UPIN. Prospective PRO projects include a PRO-West endeavor to link Part B claims involving blood transfusions to medical reports via UPINs. In addition, DELMARVA suggested developing a regional database based on UPINs (this could be an extract of all *Registry* data), thus easing their efforts to track physicians.

The current use of UPINs by PROs is rather limited. Even though only three PROs were interviewed, their satisfaction with UPINs as a research tool covered the entire spectrum including indifference. Since DELMARVA and PRO-West were unable to quantify the problems they had with UPINs, compared to other identifiers such as state license numbers, it is difficult to determine whether UPINs are, from the PROs' perspective, an improvement over other physician identifiers. It is clear, however, that the two PROs' expectations and, hopefully,

experiences would have been improved had they understood, prior to the projects' start, the carriers' role in the UPIN assignment process and the ability of carriers to provide the PROs with the physicians' personal, professional, and practice characteristics.

3.0 PRELIMINARY ANALYSES OF REGISTRY AND NCH PART B CLAIMS DATA

The primary purposes of the five analyses presented in this chapter were to document data patterns and problems and to develop background information to help guide the carrier interviews, the analysis of high-volume physicians, and the state licensing board interviews. As noted in Chapter 1, the results also may be of interest to other investigators in understanding the current limitations of physician identifiers when using National Claims History (NCH) and Physician Registry data. Also as noted in Chapter 1, the results may be informative to GTE, the design contractor for the new Medicare Transaction System, and the contractors who will be responsible for claims processing starting in 1999.

The first two analyses, a comparison of between PINs found in claims data and the Physician Registry and a comparison of claims dates with the Registry's DRIP status, were performed to document the existence and extent of possible problems with carrier PIN-to-UPIN crosswalks, including keeping the crosswalks up-to-date. The results from these two analyses were also used in the carrier interviews.

The professional and services characteristics of low- and high-volume physicians were the subjects of the next two analyses. These two analyses were primarily performed to provide a contextual background in which to place a subsequent analysis of data collected from high-volume physicians. State license numbers was the subject of the final analysis. It was performed to document the existence of possible carrier problems in maintaining this data element and to provide discussion topics for both the carrier and state licensing board interviews.

The analyses presented in this chapter are labeled 'preliminary' since they were undertaken, in part, to help choose carriers and state licensing boards for interviewing and to provide contextual background for the high-volume physician investigation. The analyses, therefore, were not performed as comprehensively as they would have been had there not been the necessity of producing results expeditiously. In particular, more variations or sub-analyses would have been performed if the time constraints had been less binding.

3.1 Comparison of PINs in National Claims History Claims Data with PINs the Physician Registry

A long-standing problem confronting researchers in using Medicare Part B claims was, prior to the establishment of the Physician Registry, the lack of a unique physician identifier. The introduction of UPINs was intended to reduce, if not eliminate, the problem. Since physicians still use carrier-assigned PINs when submitting claims to the carriers, the quality of UPIN reporting in NCH claims data is only as good as the "crosswalks" carriers use to match their PINs to UPINs.

In order to understand potential problems in the carriers' crosswalks, comparisons were performed between carrier-assigned PINs found in claims data with those in the Registry. Since physicians are continually adding or otherwise changing practice settings, it was necessary for each line item, to use Registry data for the year following that of the claims data. Two types of PIN comparisons were performed: for each line item, the PIN was compared with the Registry and each distinct PIN found in the claims was searched for in the Registry. The latter comparison was performed to determine whether PIN matching problems could be attributed to a small subset of PINs. PIN/UPIN combinations found in the claims were also compared with the Registry. This was done in order to see whether the association of a PIN with a UPIN was the same in both data sources.

3.1.1 Data and PIN Matching Methodology

NCH and Physician Registry data were used in the analyses. They were used in the following combinations:

NCH Claims Data	Physician Registry Data
Part B Physician Sample, 1992	October 15, 1993
Part B Physician Sample, 1993	April 4, 1994
5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only), 1993	April 4, 1994

The beneficiary sample is a standard analytical file produced by HCFA. The level of observation is a claim with a variable number of line items per record. The two physician samples are specially-constructed analytical files produced by HCFA. In contrast to the beneficiary sample, each record contains only one line item. The physician sample is purportedly restricted to only lines items with performing physician UPINs and, thus, does not contain any supplier claims as does the beneficiary sample. The two Registry files are flat files that contain one practice setting per record. They were both created by HCFA from variable-length files sent to HCFA by Transamerica Occidental Life Insurance Company (TOLIC).

Before attempting to find claims' PINs in the Registry, several data formatting algorithms were developed. This was necessary because the field lengths of the PIN variables were not the same in both data sets. In the NCH claims data, it was ten characters long and in the Registry data, it was 14 characters long. Additionally, the position of the PIN within the field was on an "as submitted" basis in both data sets. That is, the PINs were not left or right justified during the Common Working File (CWF) editing process or during the transmission of the claims to NCH. Similarly, PINs in the Registry were also not right or left justified by TOLIC.

Simple formatting rules were applied to the two data sets in order to enable comparisons. For the Registry data, only ten characters were used for the comparisons. The ten characters used depended on whether a right or left justified formatting rule was applied. Justification rules were also applied to the claims data. Additionally, to the extent that PINs appeared to use less than ten characters, padding characters were used to "fill out" the data field. Both blanks and zeroes were used as padding characters.

The simple formatting rules were applied to the PIN fields for all carriers. These formatting rules were not sufficient to generate an overall good match rate (results not shown). A set of formatting rules, by carrier, developed by the Urban Institute for matching PINs in 1989 BMAD data to the Registry, was obtained from HCFA.[1] Because NCH claims data have a ten character field for PINs rather than BMAD's nine characters and because some carriers changed

[1]Memo on "Matching Provider IDs in BMAD & UPIN Files" from Pete Welch and Mark Miller (Urban Institute) to the HCFA project officer, May 10, 1991.

their PIN formats, Urban's rules had to be updated. Urban's rules were updated on the basis of a visual inspection of the claims and Registry PIN fields (see Appendix A for the new rules).

It was not possible to develop PIN formatting rules for six carriers that provide Part B claims processing services to nine states and areas. The six carriers were (states/areas in parentheses): Pennsylvania Blue Shield (Delaware, District of Columbia, and Pennsylvania), Maryland Blue Shield (Maryland), C & S Administrative Services (Maine and Massachusetts), Michigan Blue Cross/Blue Shield (Michigan), Empire Blue Cross/Blue Shield (New York City area and downstate New York), and Utah Blue Cross/Blue Shield (Utah). The claims from these nine states/areas were not included in the analyses nor were claims from either of the two Railroad Retirement Board carriers.

A subsequent review of C & S Administrative Services (Massachusetts) data revealed that it would have been possible to develop an algorithm to match the PIN found in the claims with the Registry. A different issue, however, arose from the latter review of C & S data: for any given UPIN, only one PIN was found in the claims data whereas the Registry had several PINs of which only one *exactly* matched the claims' PIN. The other C & S PINs found in the Registry contained, as a component, the PIN found in the claims. This example was used as a discussion topic during the interview with C & S (Chapter 4).

For each data combination, two sets of comparisons were performed between each carrier's claims and practice settings in the Registry. First, by carrier, PINs in the claims data were checked for presence in the Registry. As previously noted, non-matching rates of claims' PINs for both distinct PINs and each line item were calculated. Second, by carrier, PIN/UPIN combinations in the claims data were checked for presence in the Registry. This second set of matches was restricted to PINs that had been found in the Registry and UPINs in the claims which had a valid initial letter. This second set of matches was performed to determine that, even if claims' PINs could be found in the Registry, they had the same PIN-to-UPIN association.

3.1.2 Results of Matches of PINs in Claims to the Physician Registry

Out of the 30 carriers used in the analysis, there were 17 carriers covering 24 areas that had more than ten percent of their distinct (unique) PINs, found in the 1992 Physician Sample,

that could not be found in the 1993 Registry (Table 3-1, final column).[2] South Carolina BC/BS had the highest non-match rate with nearly 74 percent of the distinct PINs not present in the Registry. The carriers with the next highest non-match rates were Nationwide Insurance Company (Ohio), C & S (New Hampshire), Pennsylvania BS (New Jersey), Colorado BC/BS, and Wisconsin Physician Service, with rates that ranged from 52.8 percent to 42.4 percent. All of the distinct PINs were found in the Registry for only two carriers: Alabama, BC/BS and Texas BC/BS.

When all line items are considered, the carriers with highest non-match rate were Wisconsin Physician Service which had a 94 percent non-match rate and South Carolina BC/BS which had an 85.8 percent non-match rate (Table 3-1, penultimate column). As would be expected from the matching rates of distinct PINs, all of the claims' PINs were found for all line items for Alabama BC/BS and Texas BC/BS.

Large differences between the values in the final two columns of Table 3-1 are generally indicative of whether the PIN matching problem is associated with a relatively large number of low-volume physicians or a relatively small number of high-volume physicians. When the percent of distinct PINs without a matching PIN (final column) exceeds the percent of line items without a matching Pin in the Registry (penultimate column), the problem is generally associated with PIN-matching problems for a relatively large number of low-volume physicians. In such cases, the line items submitted by these physicians constitutes a relatively small share of the total line items so that the non-match rate for line items is relatively low. For the final column, all physicians are counted just once, thus low-volume physicians would constitute a higher share of causes the percent of distinct PINs without a match and thus a higher percentage in the final column than in the penultimate column. Conversely, when the value in the final column is less than the value in the penultimate column, the problem is generally associated with PIN-matching problems for a relatively low number of high-volume physicians. In such cases, the line items submitted by these physicians constitutes a relatively high share of the total line items so that the non-match rate for line items is relatively high.

[2] The carrier contracts for geographic areas often change. In addition, some contract holders use several names or the names change over time. C & S Administrative Services, for instance, is the name used by Massachusetts Blue Cross and Blue Shield for its division (subsidiary) that processes Medicare Part B claims. A list of carrier names, circa 1992, and new or alternate names can be found in Appendix B. We regret any errors in this list.

TABLE 3-1

COMPARISON OF PINS BETWEEN 1992 PHYSICIAN SAMPLE NCH CLAIMS AND 1993 REGISTRY

Carrier Number	Carrier Name and Area	Total Line Items (With a PIN)	Distinct PINS	Number of Line Items With Matching PINS in Registry	Number of Distinct PINS Matching To Registry	Percent of Line Items Without Matching PIN in Registry	Percent of Distinct PINS Without Matching PIN in Registry
00880	South Carolina BC/BS, (South Carolina)	618,731	568	87,853	149	85.80 %	73.77 %
16360	Nationwide Insurance Co., (Ohio)	541,708	867	400,153	409	26.13	52.83
00780	C&S Administrative Services, (New Hampshire)	750,426	971	378,217	489	49.60	49.64
00860	Pennsylvania BS, (New Jersey)	569,743	740	269,437	373	52.71	49.60
00550	Colorado BC/BS, (Colorado)	287,045	860	220,837	481	23.07	44.07
00951	Wisconsin Physician Service, (Wisconsin)	261,671	846	15,256	372	94.17	42.42
16510	Nationwide Insurance, (West Virginia)	547,928	640	417,840	414	23.74	35.31
00640	Iowa BS, (Iowa)	730,083	870	373,102	578	48.90	33.56
00542	California BS, (Northern California)	529,115	858	399,732	445	24.45	32.37
01290	Aetna Life and Casualty, (Nevada)	445,531	866	410,591	593	7.84	31.52
01120	Aetna Life and Casualty, (Hawaii)	292,725	754	280,891	526	4.04	30.24
00825	North Dakota BC/BS, (Wyoming)	166,609	356	71,211	258	57.26	27.53
01360	Aetna Life and Casualty, (New Mexico)	310,939	766	268,458	582	14.31	24.02
01370	Aetna Life and Casualty, (Oklahoma)	472,775	754	427,253	581	9.63	22.94
01030	Aetna Life and Casualty, (Arizona)	722,015	1,213	686,411	937	4.93	22.75
00820	North Dakota BC/BS, (North & South Dakota)	940,623	830	546,502	669	41.90	19.40
00932	Washington Physician Service, (Washington)	529,606	934	449,328	763	15.16	18.31
01040	Aetna Life and Casualty, (Georgia)	576,056	659	558,945	547	2.97	17.00
02050	Transamerica Occidental Life Insurance Co., (So. California)	526,410	1,217	468,088	1,013	11.08	16.76
00870	Rhode Island Blue Shield, (Rhode Island)	374,367	503	305,706	419	18.34	16.70
00751	Montana BC/BS, (Montana)	385,563	607	382,587	513	0.77	15.49
14330	Group Health Insurance, Inc., (Upstate New York)	119,361	114	99,400	99	16.72	13.16
10240	Travelers Insurance Co., (Minnesota)	239,382	452	211,971	404	11.45	10.62
05440	Equicor Life Assurance, (Tennessee)	723,968	628	697,040	563	3.72	10.35
00520	Arkansas BC/BS, (Akansas)	729,516	668	675,073	608	7.46	8.98
00528	Arkansas BC/BS, (Louisiana)	747,347	921	706,885	846	5.41	8.14
00973	S.S.S., (Puerto Rico)	484,199	791	470,542	728	2.82	7.97
00720	Minnesota BC/BS, (Minnesota)	171,441	296	157,027	274	8.41	7.43
11260	Missouri General Am. Life, (Missouri)	546,273	727	541,944	675	0.79	7.15
00740	Kansas BS, (Missouri)	433,368	457	405,805	431	6.36	5.69
05535	Prudential, (North Carolina)	566,152	611	541,973	582	4.27	4.75
10250	Travelers Insurance Co., (Mississippi)	619,574	591	609,593	564	1.61	4.57
00650	Kansas BS, (Kansas)	824,465	698	767,773	673	6.88	3.58
00655	Kansas BS, (Nebraska)	798,580	676	766,058	653	4.07	3.40
00660	Kentucky BC/BS, (Kentucky)	541,933	559	527,062	540	2.74	3.40
01020	Aetna Life and Casualty, (Alaska)	122,883	515	120,651	498	1.82	3.30
10230	Travelers Insurance Co., (Connecticut)	433,005	526	425,240	509	1.79	3.23
05130	Equicor Life Assurance, (Idaho)	405,318	498	397,933	483	1.82	3.01
00621	Illinois BC/BS, (Illinois)	791,317	1,114	771,951	1,083	2.45	2.78
10490	Travelers Insurance Co., (Virginia)	482,553	474	480,536	462	0.42	2.53
01380	Aetna Life and Casualty, (Oregon)	397,273	633	395,673	621	0.40	1.90

TABLE 3-1 (continued)

COMPARISON OF PINS BETWEEN 1992 PHYSICIAN SAMPLE NCH CLAIMS AND 1993 REGISTRY

Carrier Number	Carrier Name and Area	Total Line Items (With a PIN)	Distinct PINS	Number of Line Items With Matching PINS in Registry	Number of Distinct PINS Matching To Registry	Percent of Line Items Without Matching PIN in Registry	Percent of Distinct PINS Without Matching PIN in Registry
00630	Indiana BC/BS, (Indiana)	647,853	774	644,123	762	0.58 %	1.55 %
00801	Blue Shield of Western New York, (Western New York)	250,584	320	250,578	318	0.00	0.63
00510	Alabama BC/BS, (Alabama)	766,133	616	766,133	818	0.00	0.00
00900	Texas BC/BS, (Texas)	716,310	813	716,310	813	0.00	0.00

NOTES: Claims from Pennsylvania Blue Shield (Delaware, District of Columbia, and Pennsylvania), Maryland Blue Shield (Maryland), C & S Administrative Services (Maine and Massachusetts), Michigan Blue Cross/Blue Shield (Michigan), Empire Blue Cross/Blue Shield (New York City area and downstate New York), Utah Blue Cross/Blue Shield (Utah), and the two Railroad Board carriers were not used in the tabulations (see text).

SOURCE: Health Economics Research, Inc. tabulations using 1992 Part B Physician Sample and Physician Registry (October 15, 1993).

There are several carriers in Table 3-1 for which the line item non-match rate (penultimate column) is much lower than the distinct PIN non-match rate and, hence, is indicative of a problem in matching PINs for low-volume physicians. The results for Aetna (Nevada, Hawaii, New Mexico, Oklahoma, Arizona, and Georgia) and Montana BC/BS are the best examples of PIN matching problems for low-volume physicians. Neither of the two Nationwide Insurance Company and the Colorado BC/BS results are good examples of PIN matching problems for low-volume physicians because, for each case, the values in both columns are high. Although there are several cases (e.g., Wisconsin Physician Service and North Dakota BC/BS [North and South Dakota]) in which the line item non-matching rate greatly exceeds the distinct PIN non-matching rate, the rates in both columns are so high that it is misleading to associate the non-matching problem with high-volume physicians.

To test whether the claims' PINs found in the Registry had the same UPIN associated with it as in the Registry, comparisons were performed between PIN/UPIN combinations found in the claims and the Registry. Line items that had PINs that could not be found in the Registry were omitted from this test since the PINs already had not been found. Generally, the same PIN/UPIN combinations found in the claims were also found in the Registry. The non-match rates in the final two columns of Table 3-2 were often equal to zero and all but four values were under one percent.

To take into account the possibility that many carriers changed their PIN formats between 1992 and 1993 (with resultant high non-match rates), 1993 Physician Sample PINs were compared to the 1994 Registry. Before comparing PINs between the two data sets, the PIN formatting rules were reviewed: none of the formatting rules had to be revised. Although in this comparison fewer carriers -- 14 compared to 17 earlier -- had non-match rates for distinct PINs higher than ten percent, the non-matching rates between the 1993 Physician Sample and 1994 Registry were still poor (Table 3-3). South Carolina BC/BS still had the highest rate of non-matches for distinct PINs and, also, for all line items. The relative values of the two final columns, with one exception, do not conclusively provide evidence that non-matching problems are associated with high- or low-volume physicians. The exception is for Montana BC/BS and it dramatically points to a PIN-matching problem associated with low-volume physicians.

The physician samples were drawn based on performing UPINs that are present in NCH

TABLE 3-2

COMPARISON OF PIN/UPIN COMBINATIONS BETWEEN 1992 PHYSICIAN SAMPLE NCH CLAIMS AND 1993 REGISTRY

Carrier Number	Carrier Name and Area	Total Line Items With Both a PIN and UPIN)	Distinct PIN/UPINS	Number of Line Items With Matching PINS/UPINS	Number of Distinct PIN/UPINS Matching to Registry	Percent of Line Items Without Matching PIN/UPIN in Registry	Percent of Distinct PIN/UPIN Without Matching PIN/UPIN In Registry
00655	Kansas BS, (Nebraska)	766,056	478	763,544	471	0.33 %	1.46 %
10250	Travelers Insurance Co., (Mississippi)	609,593	402	606,983	397	0.10	1.24
00550	Colorado BC/BS, (Colorado)	220,837	391	220,539	387	0.13	1.02
00825	North Dakota BC/BS, (Wyoming)	71,211	208	71,166	206	0.04	0.96
01370	Aetna Life and Casualty, (Oklahoma)	427,253	436	426,962	432	0.07	0.92
00590	Florida BC/BS, (Florida)	1,078,122	579	1,075,376	575	0.25	0.69
01030	Aetna Life and Casualty, (Arizona)	686,411	677	685,767	673	0.09	0.59
10490	Travelers Insurance Co., (Virginia)	480,536	358	478,369	356	0.45	0.56
00520	Arkansas BC/BS, (Arkansas)	675,073	407	673,369	405	0.25	0.49
01120	Aetna Life and Casualty, (Hawaii)	280,891	422	280,639	420	0.09	0.47
00973	S.S.S., (Puerto Rico)	470,542	545	470,026	543	0.11	0.37
00870	Rhode Island Blue Shield, (Rhode Island)	305,706	316	305,070	315	0.21	0.32
00740	Kansas BS, (Missouri)	405,805	331	399,936	330	1.45	0.30
00860	Pennsylvania BS, (New Jersey)	269,437	373	269,073	372	0.14	0.27
05130	Equicor Life Assurance, (Idaho)	397,933	365	397,835	364	0.02	0.27
00660	Kentucky BC/BS, (Kentucky)	527,062	387	527,061	386	0.00	0.26
00751	Montana BC/BS, (Montana)	382,587	391	382,585	390	0.00	0.26
10230	Travelers Insurance Co., (Connecticut)	425,240	424	425,170	423	0.02	0.24
00542	California BS (Northern California)	399,732	445	399,144	444	0.15	0.22
00640	Iowa BS, (Iowa)	373,102	465	372,345	464	0.20	0.22
05440	Equicor Life Assurance, (Tennessee)	697,040	455	696,818	454	0.03	0.22
11260	Missouri General Am. Life, (Missouri)	541,944	450	541,801	449	0.03	0.22
00650	Kansas BS, (Kansas)	767,773	482	766,636	481	0.15	0.21
01380	Aetna Life and Casualty, (Oregon)	395,673	472	395,669	471	0.00	0.21
00528	Arkansas BC/BS, (Louisiana)	706,885	510	706,884	509	0.00	0.20
00900	Texas BC/BS, (Texas)	716,310	597	716,305	596	0.00	0.17
02050	Transamerica Occidental Life Insurance Co., (So. California)	468,088	594	468,067	593	0.00	0.17
00932	Washington Physician Service, (Washington)	449,328	625	449,299	624	0.01	0.16
00510	Alabama BC/BS, (Alabama)	766,133	413	766,133	413	0.00	0.00
00621	Illinois BC/BS, (Illinois)	771,951	695	771,951	695	0.00	0.00
00630	Indiana BC/BS, (Indiana)	644,123	520	644,123	520	0.00	0.00
00720	Minnesota BC/BS, (Minnesota)	157,027	180	157,027	180	0.00	0.00
00780	C&S Administrative Services, (New Hampshire)	378,217	480	378,217	480	0.00	0.00
00801	Blue Shield of Western New York, (Western New York)	250,578	219	250,578	219	0.00	0.00
00820	North Dakota BC/BS, (North & South Dakota)	546,502	555	546,502	555	0.00	0.00
00880	South Carolina BC/BS, (South Carolina)	87,853	123	87,853	123	0.00	0.00
00951	Wisconsin Physician Service, (Wisconsin)	15,256	339	15,256	339	0.00	0.00
01020	Aetna Life and Casualty, (Alaska)	120,651	379	120,651	379	0.00	0.00
01040	Aetna Life and Casualty, (Georgia)	558,945	434	558,945	434	0.00	0.00
01290	Aetna Life and Casualty, (Nevada)	410,591	420	410,591	420	0.00	0.00

TABLE 3-2 (continued)

COMPARISON OF PIN/UPIN COMBINATIONS BETWEEN 1992 PHYSICIAN SAMPLE NCH CLAIMS AND 1993 REGISTRY

Carrier Number	Carrier Name and Area	Total Line Items With Both a PIN and UPIN)	Distinct PIN/UPINS	Number of Line Items With Matching PINS/UPINS	Number of Distinct PIN/UPINS Matching to Registry	Percent of Line Items Without Matching PIN/UPIN in Registry	Percent of Distinct PIN/UPIN Without Matching PIN/UPIN in Registry
01360	Aetna Life and Casualty, (New Mexico)	266,458	434	266,458	434	0.00 %	0.00 %
05535	Prudential, (North Carolina)	541,973	432	541,973	432	0.00	0.00
10240	Travelers Insurance Co., (Minnesota)	211,971	332	211,971	332	0.00	0.00
14330	Group Health Insurance, Inc., (Upstate New York)	99,400	79	99,400	79	0.00	0.00
16360	Nationwide Insurance Co., (Ohio)	400,153	328	400,153	328	0.00	0.00
16510	Nationwide Insurance, (West Virginia)	417,840	323	417,840	323	0.00	0.00

NOTES: Claims from Pennsylvania Blue Shield (Delaware, District of Columbia, and Pennsylvania), Maryland Blue Shield (Maryland), C & S Administrative Services (Maine and Massachusetts), Michigan Blue Cross/Blue Shield (Michigan), Empire Blue Cross/Blue Shield (New York City area and downstate New York), Utah Blue Cross/Blue Shield (Utah), and the two Railroad Board carriers were not used in the tabulations (see text).

SOURCE: Health Economics Research, Inc. tabulations using 1992 Part B Physician Sample and Physician Registry (October 15, 1993).

TABLE 3-3

COMPARISON OF PINS BETWEEN 1993 PHYSICIAN SAMPLE NCH CLAIMS AND 1994 REGISTRY

Carrier Number	Carrier Name and Area	Total Claims (With a PIN)	Distinct PINS	Number of Line Items With Matching PINS in Registry	Number of Distinct PINS matching to Registry	Percent of Line Items Without Matching PIN in Registry	Percent of Distinct PINS Without Matching PIN in Registry
00880	South Carolina BC/BS, (South Carolina)	665,546	558	184,656	203	72.26 %	63.62 %
16360	Nationwide Insurance Co., (Ohio)	592,549	881	402,438	386	32.08	56.19
00550	Colorado BC/BS, (Colorado)	314,101	466	112,430	212	64.21	54.51
00860	Pennsylvania BS, (New Jersey)	660,758	696	297,336	344	55.00	50.58
00780	C&S Administrative Services, (New Hampshire)	807,527	995	426,853	516	47.14	48.14
00751	Montana BC/BS, (Montana)	406,746	928	405,265	497	0.36	46.44
00640	Iowa BS, (Iowa)	778,187	655	375,835	364	51.70	44.43
00825	North Dakota BC/BS, (Wyoming)	174,265	290	72,581	164	58.35	43.45
16510	Nationwide Insurance, (West Virginia)	595,410	664	414,552	395	30.38	40.51
00820	North Dakota BC/BS, (North & South Dakota)	959,005	586	514,288	370	46.37	36.86
00542	California BS, (Northern California)	570,023	694	428,221	460	24.88	33.72
01390	Aetna Life and Casualty, (Washington)	544,039	1,037	470,878	866	13.45	16.49
00670	Rhode Island Blue Shield, (Rhode Island)	409,682	473	346,803	408	15.35	13.74
01040	Aetna Life and Casualty, (Georgia)	636,703	668	602,411	593	5.39	11.23
05440	Connecticut General Insurance, (Tennessee)	776,120	655	730,327	585	5.90	10.69
14330	Group Health Insurance, Inc., (Upstate New York)	126,137	106	110,294	95	12.56	10.38
00951	Wisconsin Physiclar Service, (Wisconsin)	572,431	760	552,052	692	3.56	8.95
00520	Arkansas BC/BS, (Arkansas)	814,696	678	765,325	631	6.06	6.93
00528	Arkansas BC/BS, (Louisiana)	841,938	914	806,121	854	4.25	6.57
05130	Connecticut General Insurance, (Idaho)	424,265	530	405,897	496	4.33	6.42
10250	Travelers Insurance Co., (Mississippi)	686,750	574	668,028	543	2.73	5.40
10240	Travelers Insurance Co., (Minnesota)	257,396	451	245,117	428	4.77	5.10
00720	Minnesota BC/BS, (Minnesota)	204,987	287	197,581	273	3.61	4.88
00740	Kansas BS, (Missouri)	451,079	478	424,745	455	5.84	4.81
00660	Kentucky BC/BS, (Kentucky)	578,264	594	562,488	567	2.39	4.55
05535	Connecticut General Insurance, (North Carolina)	589,114	660	568,483	630	3.50	4.55
10230	Travelers Insurance Co., (Connecticut)	495,646	516	485,822	500	1.98	3.10
00650	Kansas BS, (Kansas)	860,651	707	813,823	686	5.44	2.97
02050	Transamerica Occidental Life Insurance Co., (So. California)	628,779	909	626,167	882	0.42	2.97
01020	Aetna Life and Casualty, (Alaska)	144,635	543	142,620	527	1.39	2.95
10490	Travelers Insurance Co., (Virginia)	547,617	498	543,679	484	0.72	2.81
00655	Kansas BS, (Nebraska)	797,595	723	777,671	703	2.50	2.77
01290	Aetna Life and Casualty, (Nevada)	507,516	649	505,302	634	0.44	2.31
01380	Aetna Life and Casualty, (Oregon)	384,841	653	383,560	641	0.33	1.84
11260	Missouri General Am. Life, (Missouri)	590,403	736	588,529	723	0.32	1.77
00630	Indiana BC/BS, (Indiana)	671,889	798	667,064	786	0.72	1.50

TABLE 3-3 (continued)

COMPARISON OF PINS BETWEEN 1993 PHYSICIAN SAMPLE NCH CLAIMS AND 1994 REGISTRY

Carrier Number	Carrier Name and Area	Total Claims (With a PIN)	Distinct PINS	Number of Line Items With Matching PINS in Registry	Number of Distinct PINS matching to Registry	Percent of Line Items Without Matching PIN in Registry	Percent of Distinct PINS Without Matching PIN in Registry
01030	Aetna Life and Casualty, (Arizona)	807,079	959	801,861	945	0.65 %	1.46 %
00590	Florida BC/BS, (Florida)	1,238,258	940	1,236,730	931	0.12	0.96
00621	Illinois BC/BS, (Illinois)	813,877	1,083	811,190	1,074	0.33	0.83
01120	Aetna Life and Casualty, (Hawaii)	317,272	557	317,259	553	0.00	0.72
00801	Blue Shield of Western New York, (Western New York)	273,078	311	272,971	309	0.04	0.64
01370	Aetna Life and Casualty, (Oklahoma)	644,142	592	643,957	589	0.03	0.51
00900	Texas BC/BS, (Texas)	782,843	826	782,822	822	0.00	0.48
01360	Aetna Life and Casualty, (New Mexico)	408,697	612	407,879	610	0.20	0.33
00510	Alabama BC/BS, (Alabama)	808,017	616	808,017	616	0.00	0.00

NOTES: Claims from Pennsylvania Blue Shield (Delaware, District of Columbia, and Pennsylvania), Maryland Blue Shield (Maryland), C & S Administrative Services (Maine and Massachusetts), Michigan Blue Cross/Blue Shield (Michigan), Empire Blue Cross/Blue Shield (New York City area and downstate New York), Utah Blue Cross/Blue Shield (Utah), and the two Railroad Board carriers were not used in the tabulations (see text).

SOURCE: Health Economics Research, Inc. tabulations using 1993 Part B Physician Sample and Physician Registry (April 4, 1994).

claims. This sampling technique may have biased downwards the non-matching rates found in the preceding tables. To determine whether bias was important, claims from the 1993 5 percent Beneficiary Sample were used in comparisons with the 1994 Registry. Since the beneficiary sample includes supplier claims, all line items with a blank performing UPIN field were excluded from the analysis. The results of the new comparisons in Table 3-4 were roughly comparable to those in Tables 3-1 and 3-3. The 17 carriers (22 areas) in Table 3-4 with non-matching rates for distinct PINs greater than ten percent is similar to the 17 in Table 3-1 and 14 in Table 3-3. If the comparison between tables is restricted to 1993 data, then the results in Table 3-4 were slightly worse than in Table 3-3. Fourteen of the carriers with distinct PIN non-match rates exceeding ten percent in Table 3-4 were among the 17 carriers whose rates exceeded ten percent in Table 3-1. The results for Montana BC/BS and Wisconsin Physician Service indicate, as in previous tables, non-matching problems associated with low-volume physicians. Unlike the previous tables, however, there appear to be at least two cases in which non-matching problems seem to be associated with high-volume physicians: Kentucky BC/BS and Aetna (Washington).

3.1.3 Discussion of PIN Comparisons

The large number of carriers (nine) for which PIN comparisons could not be performed and the other 17 or so for which non-matching rates exceeded ten percent indicate that there are still problems in associating information found in claims data with that in the Registry. Whether this problem indicates whether the UPINs in the claims data were not correctly attached to the claims could not be determined from the analyses. A more definitive assessment must await the results of carrier interviews and other investigations. Finding a claims' PIN in the Registry is usually indicative of finding the claims' PIN/UPIN combination in the Registry as well. Whether this last finding extends to other data elements will be determined in other analyses, including the one in the next section.

TABLE 3-4

COMPARISON OF PINS BETWEEN 1993 5% BENEFICIARY SAMPLE NCH CLAIMS AND 1994 REGISTRY

Carrier Number	Carrier Name and Area	Total Claims (With a PIN)	Distinct PINS	Number of Line Items With Matching PINS in Registry	Number of Distinc INS matching to Registry	Percent of Line Items Without Matching PIN In Registry	Percent of Distinct PINS Without Matching PIN in Registry
00880	South Carolina BC/BS, (South Carolina)	452,049	6,814	114,942	2,355	74.6 %	65.4 %
00751	Montana BC/BS, (Montana)	84,505	2,943	84,263	1,667	0.3	43.4
16360	Nationwide Insurance Co., (Ohio)	1,536,844	25,204	1,029,725	15,151	33.0	39.9
16510	Nationwide Insurance, (West Virginia)	243,256	4,209	173,714	2,672	28.6	36.5
00780	C&S Administrative Services, (New Hampshire)	181,684	3,340	121,798	2,136	33.0	36.0
00951	Wisconsin Physician Service, (Wisconsin)	683,390	11,582	618,512	7,907	9.5	31.7
00825	North Dakota BC/BS, (Wyoming)	34,858	525	13,228	360	62.1	31.4
00542	California BS, (Northern California)	1,364,049	23,629	1,004,701	16,656	26.3	29.5
00550	Colorado BC/BS, (Colorado)	271,159	3,516	108,717	2,593	59.9	26.3
00820	North Dakota BC/BS, (North & South Dakota)	229,151	1,204	128,872	913	43.8	24.2
00860	Pennsylvania BS, (New Jersey)	1,131,193	11,439	551,087	8,773	51.3	23.3
00650	Kansas BS, (Kansas)	325,336	4,844	267,579	3,780	17.8	22.0
00640	Iowa BS, (Iowa)	425,902	3,869	180,954	3,051	57.5	21.1
01040	Aetna Life and Casualty, (Georgia)	864,708	14,227	737,069	11,409	14.8	19.8
00655	Kansas BS, (Nebraska)	258,072	4,097	225,931	3,289	12.5	19.7
00510	Alabama BC/BS, (Alabama)	752,973	10,223	625,958	8,611	16.9	15.8
00740	Kansas BS, (Missouri)	313,313	5,075	251,606	4,313	19.7	15.0
11260	Missouri General Am. Life, (Missouri)	688,571	10,875	551,451	9,398	19.9	13.6
00870	Rhode Island Blue Shield, (Rhode Island)	149,995	2,449	127,272	2,151	15.1	12.2
05440	Connecticut General Insurance, (Tennessee)	789,454	10,773	737,465	9,540	6.6	11.4
14330	Group Health Insurance, Inc., (Upstate New York)	195,187	3,776	171,196	3,381	12.3	10.5
01370	Aetna Life and Casualty, (Oklahoma)	430,924	6,494	400,034	5,849	7.2	9.9
00590	Florida BC/BS, (Florida)	3,338,842	37,719	3,072,677	34,071	8.0	9.7
01290	Aetna Life and Casualty, (Nevada)	162,255	2,899	147,442	2,654	9.1	8.5
01030	Aetna Life and Casualty, (Arizona)	534,820	9,009	469,034	8,306	12.3	7.8
01380	Aetna Life and Casualty, (Oregon)	303,479	8,888	287,447	8,359	5.3	7.7
00973	S.S.S. (Puerto Rico)	268,514	5,121	252,821	4,751	5.1	7.2
01020	Aetna Life and Casualty, (Alaska)	17,583	873	16,618	810	5.5	7.2
00660	Kentucky BC/BS, (Kentucky)	663,011	8,178	516,612	7,597	22.1	7.1
01360	Aetna Life and Casualty, (New Mexico)	132,316	3,150	125,218	2,932	5.4	6.9
05130	Connecticut General Insurance, (Idaho)	105,816	2,099	99,951	1,958	5.5	6.7
01390	Aetna Life and Casualty, (Washington)	526,487	11,027	447,513	10,379	15.0	5.9
05535	Connecticut General Insurance, (North Carolina)	893,726	13,545	854,934	12,774	4.3	5.7
10250	Travelers Insurance Co., (Mississippi)	355,323	4,342	345,235	4,111	2.8	5.3
00528	Arkansas BC/BS, (Louisiana)	595,980	9,258	570,822	8,779	4.3	5.2
00630	Indiana BC/BS, (Indiana)	693,930	12,720	649,828	12,082	6.4	5.0
02050	Transamerica Occidental Life Insurance Co., (So. California)	1,620,350	32,391	1,548,461	30,829	4.4	4.8
10240	Travelers Insurance Co., (Minnesota)	230,044	8,087	220,517	5,794	4.1	4.8

TABLE 3-4 (continued)

COMPARISON OF PINS BETWEEN 1993 5% BENEFICIARY SAMPLE NCH CLAIMS AND 1994 REGISTRY

Carrier Number	Carrier Name and Area	Total Claims (With a PIN)	Distinct PINS	Number of Line Items With Matching PINS in Registry	Number of Distinc INS matching to Registry	Percent of Line Items Without Matching PIN in Registry	Percent of Distinct PINS Without Matching PIN in Registry
00520	Arkansas BC/BS, (Arkansas)	400,722	4,907	380,283	4,680	5.1 %	4.6 %
00720	Minnesota BC/BS, (Minnesota)	208,822	3,970	204,397	3,795	2.1	4.4
01120	Aetna Life and Casualty, (Hawaii)	92,656	2,228	84,598	2,140	8.7	4.0
10230	Travelers Insurance Co., (Connecticut)	474,535	7,948	468,447	7,728	1.3	2.8
10490	Travelers Insurance Co., (Virginia)	641,923	9,791	633,655	9,594	1.3	2.0
00621	Illinois BC/BS, (Illinois)	1,348,984	25,141	1,340,954	24,912	0.6	0.9
00801	Blue Shield of Western New York, (Western New York)	721,778	12,029	719,052	11,947	0.4	0.7
00900	Texas BC/BS, (Texas)	1,952,105	30,977	1,951,926	30,951	0.0	0.1

NOTES: Claims from Pennsylvania Blue Shield (Delaware, District of Columbia, and Pennsylvania), Maryland Blue Shield (Maryland), C & S Administrative Services (Maine and Massachusetts), Michigan Blue Cross/Blue Shield (Michigan), Empire Blue Cross/Blue Shield (New York City area and downstate New York), Utah Blue Cross/Blue Shield (Utah), and the two Railroad Board carriers were not used in the tabulations (see text).

SOURCE: Health Economics Research, Inc. tabulations using 1993 5% Beneficiary Sample Standard Analytical File and Physician Registry (April 4, 1994).

3.2 Consistency of Activity Status of Physicians

Interviews conducted with carriers in 1993 revealed problems they had in maintaining up-to-date provider files.[3] An obvious concern is whether the DRIP status for each practice setting in the Registry correctly reflects the setting's Medicare activity status. (The acronym *DRIP* is composed from the initial letters of each of the four possible activity statuses in the Registry: de-activated, resident, intern, and practicing.)

One way to assess this issue is to compare service dates on claims data with the DRIP status and the record maintenance dates contained in the Registry. Consistency checks were performed between the last expense date on line items and dates on Registry records for those line items whose PIN/UPIN combinations were found in the Registry. Two types of consistency date checks were developed. For claims associated with active practice settings (DRIP status equal to R, I, or P), the last expense date was compared to the "add" date on the Registry (Exhibit 3-1). The "add" date indicates when the practice setting was added to the Registry. For claims associated with de-activated practice settings (DRIP status equal to D), the last expense date was compared to the "change" date on the Registry. It was assumed that the change date on de-activated practice settings was the date the practice setting was de-activated.

Discrepancies were indicated when the claims dates were inconsistent with the Registry dates. For active practice settings, add dates more than 30 days after the last expense date were considered inconsistent. (A "grace" period of 30 days was included to allow for the establishment of a new practice setting on the Registry in the event that the claim was submitted from a practice setting not previously contained in the provider file.) For de-activated practice settings, a Registry change date prior to the last expense date was considered inconsistent.

Each line item with a date inconsistency was tabulated and discrepancies rates calculated by carrier (Table 3-5). Nationwide Insurance Company had the two highest discrepancy rates with their Ohio operations having date discrepancies on nearly a third of all line items and their West Virginia operations having date discrepancies on 20 percent of all line items. California BS

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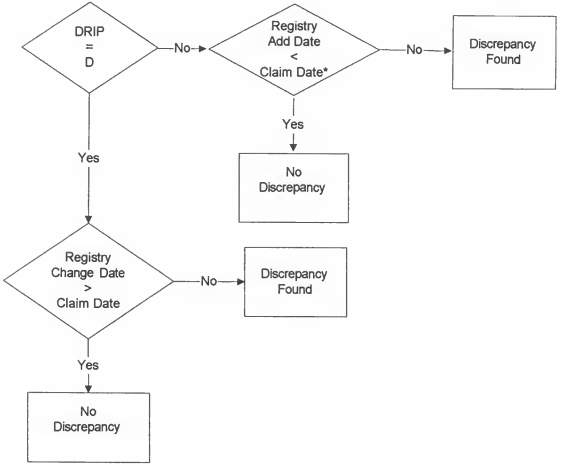
[3]Health Economics Research, Inc. *Unique Physician Identification Number (UPIN) Validation Studies. Final Report.* HCFA Master Contract No. 500-92-0020, Delivery Order No. 5, February 7, 1995.

EXHIBIT 3-1

ALGORITHM TO DETECT DISCREPANCIES BETWEEN DATES ON PHYSICIAN REGISTRY AND ON PHYSICIAN PART B CLAIMS BY DRIP STATUS



* A "grace period" of 30 days was added to allow for the establishment of a new practice setting on the Registry.

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TABLE 3-5

DISCREPANCY RATES, BY CARRIER, BETWEEN DATES ON PHYSICIAN PART B LINE ITEMS AND PHYSICIAN DRIP STATUS: IN DESCENDING ORDER BY RATE BASED ON LAST EXPENSE DATE

Carrier Identification Number	Carrier Name and Service Area	Number of Line Items	Discrepancy Rates
16360	Nationwide Insurance Co., OH	399,595	0.327
16510	Nationwide Insurance, WV	411,439	0.200
00542	California BS, Northern CA	399,144	0.062
10240	Travelers Insurance Co., Twin Cities Metro, MN	211,970	0.034
00740	Kansas BS, Western MO	399,936	0.024
00825	North Dakota BC/BS, WY	70,865	0.023
00951	Wisconsin Physician Service, WI	15,069	0.023
01020	Aetna Life and Casualty, AK	120,600	0.020
00932	Washington Physician Service, WA	448,827	0.017
02050	Transamerica Occidental Life Ins, Southern CA	429,690	0.017
00880	South Carolina BC/BS, SC	87,853	0.017
01380	Aetna Life and Casualty, OR	395,668	0.014
01030	Aetna Life and Casualty, AZ	685,067	0.013
00870	Rhode Island Blue Shield, RI	305,059	0.012
00590	Florida BC/BS, FL	1,075,376	0.012
10490	Travelers Insurance Co., VA	478,186	0.012
11260	Missouri General Am. Life, Eastern MO	534,366	0.011
00655	Kansas BS, NE	763,544	0.011
00780	Massachusetts BC/BS, NH	378,217	0.011
14330	Group Health Insurance, Inc., NY	99,278	0.011
01040	Aetna Life and Casualty, GA	558,937	0.010
01120	Aetna Life and Casualty, HI	280,639	0.010
01360	Aetna Life and Casualty, NM	266,458	0.010
01290	Aetna Life and Casualty, NV	389,620	0.009
00528	Arkansas BC/BS, LA	706,859	0.009
00720	Minnesota BC/BS, MN	155,918	0.007
00621	Illinois BC/BS, IL	770,344	0.007
05535	Prudential, NC	540,839	0.007
00801	Blue Shield of Western New York, NY	248,532	0.007
00640	Iowa BS, IA	367,904	0.005
00650	Kansas BS, KS	745,734	0.005
00820	North Dakota BC/BS, ND-SD	299,982	0.004
10250	Travelers Insurance Co., MS	608,492	0.004
00630	Indiana BC/BS, IN	644,041	0.004
00660	Kentucky BC/BS, KY	526,346	0.004
00860	Pennsylvania BS, NJ	258,080	0.004
00550	Colorado BC/BS, CO	220,499	0.004
05440	Equicor Life Assurance, TN	696,630	0.004
01370	Aetna Life and Casualty, OK	426,962	0.003
10230	Travelers Insurance Co., CT	425,159	0.003
00900	Texas BC/BS, TX	716,305	0.003

TABLE 3-5 (continued)

DISCREPANCY RATES, BY CARRIER, BETWEEN DATES ON PHYSICIAN PART B LINE ITEMS AND PHYSICIAN DRIP STATUS: IN DESCENDING ORDER BY RATE BASED ON LAST EXPENSE DATE

Carrier Identification Number	Carrier Name and Service Area	Number of Line Items	Discrepancy Rates
05130	Equicor Life Assurance, ID	397,835	0.002
00751	Montana BC/BS, MT	381,973	0.002
00510	Alabama BC/BS, AL	766,133	0.002
00520	Arkansas BC/BS, AR	673,166	0.001

NOTES: Line items that had PIN/UPIN combinations that could not be found in the Registry were excluded from the analysis.

SOURCE: Health Economics Research, Inc. tabulations of 1992 Physician Sample and 1993 Physician Registry.

had the third highest date discrepancy rate at 6.2 percent and five other carriers had rates between 2 and 3.4 percent. (For the rest of the this report, the term "carrier" is used in a more generic fashion.)[4] Of the remaining carriers, 22 had date discrepancy rates of less than one percent.

The findings on the consistency of activity status might be affected by the data used for the analysis. For instance, if it had been available on claims data used, it would have been preferable to have used the date the claim was submitted rather than the last expense date. The reason is that physicians sometimes do not submit claims to carriers until many days, or in some cases, weeks or months after services were rendered. As was learned in the subsequent carrier interviews, carriers often accept claims submitted well after the services were rendered, although some carriers apply a percentage deduction, as a penalty, to total allowed charges. Thus, the grace period might have been too short, which, in turn, implies that the inconsistency rates might have been lower with a longer grace period.

A general problem for this and other analyses of the type presented in this report, is that Registry data is, by necessity, used rather than carrier provider files. The carriers rather than the Registry are responsible, in the first instance, for maintaining, reviewing, and, if necessary, updating the DRIP status. Carriers usually forward changes to the DRIP status and other data elements to the Registry weekly.[5] Like the provider files, the Registry itself is constantly being updated. The Registry files used in the analyses are submitted by TOLIC to HCFA on a quarterly basis. Time gaps are, thus, created between daily carrier activity and the Registry data submitted to HCFA. The problem of timely Registry data, however, may not be an important problem if the add and change dates, as used in this analysis are, as seems, reliable indicators of when changes were made to the DRIP status.

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[4] Thus, for example, Aetna's operations in Georgia and New Mexico are considered as two carriers rather than one carrier with two contracts.

[5] To reduce confusion about the status of changes submitted by carriers to the Registry, TOLIC does not allow carriers to submit changes to the Registry on a daily basis.

3.3 Physician Characteristics by Physician Volume

To help provide contextual background information for an investigation of high-volume physicians, the personal and professional characteristics of physicians were tabulated and classified by the physician's volume during 1993. The results of the analysis were also used to help develop questions about difficulty in maintaining up-to-date provider records for the carrier interview protocol.

Physicians were ranked by the number of line items associated with each distinct UPIN in the 1993 Physician Sample file. The bottom one percentile (16 and fewer line items) were defined as low-volume physicians, those within the 25-75 percentiles (111-1,565 line items) were defined as middle volume, and those at the top ninety-ninth percentile (9,021 or more line items) were defined as high volume. As a result of these criteria, 2,536 physicians were classified as low-volume physicians , 12.479 were classified as middle-volume physicians, and 250 were classified as high-volume physicians. Physician characteristics were obtained from the 1994 Physician Registry.

About 54 percent of low-volume physicians were under age 45, about 50 percent higher than for high-volume physicians (Table 3-6). Nearly seven percent of low-volume physicians were age 70 or more while only 2.2 percent of high-volume physicians were age 70 or more in 1992. In general, the age distribution of low-volume physicians is similar to that of middle-volume physicians with the age distribution of high-volume physicians being dissimilar to the other two.

Several specialty categories were relatively prominent among low-volume physicians; these include child-related, specialized surgery, and optometry. In contrast, 61.2 percent of high-volume physicians had primary care specialties, and high-volume physicians were more likely to practice medical sub-specialties than middle- or low-volume physicians.

Aside from medical doctors, which are well-represented in all volume categories, all types of physicians were represented among low-volume physicians while only podiatrists and osteopaths were represented among high-volume physicians. This finding was echoed by the physician status results: nearly 25 percent of low-volume physicians were not medical doctors or osteopaths while only 1.2 percent of high-volume physicians were not medical doctors or

TABLE 3-6

DISTRIBUTION OF PHYSICIAN CHARACTERISTICS BY PHYSICIAN VOLUME

	PHYSICIAN VOLUME		
	Low	Middle	High
Physician Age			
<45	54.3 %	51.3 %	36.9 %
45-64	33.7	41.0	58.8
65-69	5.1	4.1	2.2
70-74	3.7	2.3	0.9
75-79	2.0	0.8	0.9
80-84	0.7	0.3	0.0
>84	0.5	0.2	0.4
Primary Specialty			
Primary Care	23.0	27.6	61.2
Child-Related	18.7	4.9	0.8
Cardiology	1.5	1.8	5.6
Other Medical	3.6	6.8	12.8
General Surgery	2.8	6.6	0.0
Specialized Surgery	10.7	8.4	1.2
Radiology/Anesthesiology/Pathology	6.4	11.9	10.0
Other Physician Specialty	14.2	15.7	6.8
Chiropractor	7.7	8.6	0.0
Optometry	8.3	4.8	0.0
Podiatry	0.8	2.1	1.2
All other codes	2.5	1.0	0.4
Credential			
MD: Medical Doctor	73.2	81.6	97.6
DO: Osteopath	2.6	2.8	1.2
DDM: Doctor of Dental Medicine	1.3	0.0	0.0
DDS: Doctor of Dental Surgery	6.2	0.1	0.0
DPM: Podiatrist	0.8	2.1	1.2
CH: Chiropractor	7.7	8.6	0.0
OD: Optometry	8.3	4.8	0.0
Physician Status			
MD/DO	75.7	84.4	98.8
CH/DDM/DDS/DPM/OD	24.3	15.6	1.2
Solo/Group Status			
Group	54.6	67.6	79.6
2 and 3 (superseded)	1.2	0.9	0.4
Solo	44.2	31.6	20.0
Number of Physicians	2,536	12,479	250

SOURCE: Health Economics Research tabulations using 1992 Part B Physician Sample and Physician Registry (October 15, 1993).

osteopaths. Middle-volume physicians represent, more or less, a half-way position between low- and high-volume physicians for both the credential and physician status distributions.

Low-volume physicians were slightly more likely to practice in group settings than to practice in solo settings. High-volume physicians, in contrast, were much more likely to be practicing in group settings. The percent of middle-volume physicians that were in group practice was at about the midpoint of the range between low- and high-volume physicians.

3.4 Patient and Service Characteristics by Physician Volume

The patient and service characteristics of physicians were tabulated and classified by physician volume, as in the preceding section, to provide additional background information for an investigation of high-volume physicians. All patient and service characteristics were obtained from the 1993 Physician Sample. The patient characteristics and services are all based on tabulations of line items rather than on unique patients or claims.

Low-volume physicians tended to provide more services to younger patients than did high-volume physicians (Table 3-7). About 25 percent of the services provided by low-volume physicians were to patients under age 65 while only about seven percent of the services provided by high-volume physicians were to patients under age 65. Conversely, about 36 percent of the services provided by low-volume physicians were to patients aged 75 years old or older while about 53 percent of the services provided by high-volume physicians were to patients aged 75 years old or older. The share of services provided by middle-volume physicians to each age bracket was between the share of services provided by low- and high-volume physicians. For all three physician volume classes, about 40 percent of services were provided to male patients. In contrast to middle- and high-volume physicians, a larger share of services were provided by low-volume physicians to non-whites.

The distribution of services provided to patients by their Medicare eligibility status reflected the patient age distribution of low- and high-volume physicians. About 23 percent of the services provided by low-volume physicians were to the disabled while 7.4 percent of the services provided by high-volume physicians were to the disabled. About 4.5 percent of the

TABLE 3-7

PATIENT AND SERVICE RELATED CHARACTERISTICS BY PHYSICIAN VOLUME

	PHYSICIAN VOLUME		
	Low	Middle	High
Patient's Age			
<45	16.2	4.9	1.4
45-64	9.2	7.7	5.4
65-69	18.0	16.8	15.8
70-74	20.8	23.7	24.3
75-79	15.9	19.8	21.8
80-84	11.1	14.5	16.4
>85	8.9	12.6	14.8
Patient's Gender			
Male	39.7	39.9	40.2
Female	60.3	60.1	59.8
Patient's Race			
White	81.1	87.0	86.9
Black	9.4	7.5	8.2
Other	7.9	4.2	3.6
Unknown	1.6	1.4	1.3
Medicare Eligibility			
Aged without ESRD	73.3	86.0	92.2
Aged With ESRD	0.4	0.6	0.2
Disabled without ESRD	22.2	12.3	7.3
Disabled with ESRD	0.7	0.5	0.1
ESRD only	3.5	0.5	0.1
HCFA Type of Service			
Medical Care	60.3	57.3	35.5
Surgery	10.3	11.0	3.9
Consultation	4.1	4.6	1.2
Diagnostic Radiology	3.8	5.8	8.3
Diagnostic Laboratory	8.2	11.9	46.9
Therapeutic Radiology	0.1	0.7	1.1
Anesthesia	2.4	3.2	0.0
Assistance at Surgery	1.5	0.5	0.0
Other Medical Services	1.8	0.5	0.2
Low Risk Mammography	0.0	0.1	0.1
Lump sum purchase of DME, Prosthetics, Orthotics	0.1	0.2	0.0
Psychological therapy	6.3	2.2	0.1
Pneumococcal Vaccine	1.1	1.9	2.7

TABLE 3-7 (continued)

PATIENT AND SERVICE RELATED CHARACTERISTICS BY PHYSICIAN VOLUME

	PHYSICIAN VOLUME		
	Low	Middle	High
Place of Service Code			
Office	63.7	59.7	82.0
Home	0.5	0.4	0.3
Inpatient Hospital	15.7	20.3	10.9
Outpatient Hospital	8.6	9.0	3.0
Emergency Room - Hospital	7.7	6.5	0.6
All Other	3.8	4.1	3.2
Referring UPIN			
No	51.3	37.3	9.6
Yes	48.7	62.7	90.4
Number of Line Items*	14,980	7,640,978	3,342,850

NOTE: *Largest number for all of the patient or service classification variables. (The total number of line-items varied slightly by each type of patient and service characteristics because of missing values.)

SOURCE: Health Economics Research, Inc. tabulations using 1992 Part B Physician Sample.

services provided by low-volume physicians were to ESRD patients, much higher than for middle- and high-volume physicians.

The distribution of services provided to patients by the HCFA type of service also reflected the patient age and eligibility status distributions of low- and high-volume physicians. About six percent of the services provided by low-volume physicians were for psychological therapy while only 0.1 percent of the services provided by high-volume physicians were for psycholcgical services. Medical care services was, by far, the largest category of services provided by low-and middle-volume physicians while diagnostic laboratory services was the largest category of services provided by high-volume physicians.

Both low-and middle-volume physicians provided a larger share of their services in hospital settings than did high-volume physicians. Thirty-two percent of the services provided by low-volume physicians were provided in hospital settings while 14.5 percent of the services provided by high-volume physicians were provided in hospital settings. The services provided by low-volume physicians were just as likely to have been the result of a referral as not. The services provided by high-volume physicians, in contrast, were almost always the result of a referral.

3.5 An Analysis of State License Numbers on the Physician Registry

Anecdotal information from HCFA and other sources suggested that there might be problems with the state license number data element in the Physician Registry. If the state license numbers in the Physician Registry are reliable, then linkage of Medicare UPIN and claims data to other data bases, such as the National Practitioner Data Bank, might be feasible. The existence and extent of potential problems are documented in this section. The results were used during the carrier interviews and will be used in the interviews with state license boards and a re-examination, following the latter interviews, of state license numbers found in the Registry.

Practice settings that had a state license number that contained all blanks, all zeroes, or all nines were dropped from the analysis. State license numbers were then right justified according to Registry rules and all remaining blanks were filled with zeroes. Practice settings that had a state license number that contained all zeroes after padding were dropped from the analysis.

Further analysis revealed ten other patterns which were obviously not state license numbers (Table 3-8). Practice settings that had a state license number containing any of these ten patterns were also dropped from the analysis. Because other information on state license formats was not available at the time of this analysis, it was not possible to develop algorithms to detect transcription errors. De-activated practice settings were also omitted from the tabulations.

If carriers maintained perfect provider information and the Registry perfectly performed its UPIN assignments, then each physician would have only one UPIN. A prior analysis of 1993 Registry data, however, found that up to 11,000 physicians might have more than one UPIN.[6] This result suggested that the number of unique state license numbers within a state, generally, would be less than the number of distinct UPINs. When these two counts are not equal, then it is indicative of a problem.

Aside from some physicians having more than one UPIN, visual inspection of data dumps for each state[7] suggested that there might be other reasons that more than one physician could be associated with a "state license number." For instance, some other identifier, possibly a tax identification number, could be in the state license field and be associated with several (group) physicians. This appeared to be the case in several instances in Minnesota and Florida.

Not only may there be more than one UPIN associated with a state license number, but the converse case might also exist: two or more state license numbers could be associated with one UPIN. The most obvious possibility for this circumstance is when two individuals with similar names were issued the same UPIN. Transcription errors could also account for this if carriers maintain separate state license numbers for each practice setting.

The number of unique combinations of the state abbreviation (postal code) and UPINs were tabulated for each carrier (since some carriers serve more than one state). The number of unique state license numbers (within a state) were also tabulated by carrier. The value of the latter tabulation was subtracted from the former tabulation. The absolute value of this difference was divided by the number of unique combinations of state abbreviation and UPINs to obtain a

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[6] Health Economics Research, Inc. *Unique Physician Identification Number (UPIN) Validation Studies. Carrier Analysis.* HCFA Master Contract No. 500-92-0020, Delivery Order No. 5, August 23, 1994.

[7] State postal codes constitute the data element "state licensed in" on the Registry and were used to identify states.

TABLE 3-8

BOGUS STATE LICENSE NUMBERS FOUND IN THE 1994 PHYSICIAN REGISTRY

Pattern	State
111111111111	Arizona, Nevada
000000000999	Georgia
000000009999	Georgia
000111111111	Kentucky
0000000000VP	North Carolina
00000MD00000	Tennessee
000000PERMIT	Texas
00000000000*	Texas
001000000000	Utah
000000000009	West Virginia

SOURCE: Health Economics Research, Inc. examination of 1994 Physician Registry data file.

NOTE: The asterisk at the end of the second pattern for Texas is part of the pattern.

discrepancy rate (Table 3-9, final column). Higher discrepancy rates indicate poorer data. Since the types of data problems discussed above were not individually tabulated for Table 3-9, these discrepancy rates are net values for all types of problems.

Minnesota BC/BS, formerly the carrier for the area of Minnesota outside of the "Twin Cities" area, had the highest discrepancy rate at 23.2 percent, followed by Florida BC/BS at 14.4 percent. There were another seven carriers with discrepancy rates greater than five percent. There were 13 carriers with discrepancy rates less than one percent. With one insignificant exception, the number of distinct UPINs (the column labeled 2) exceeds the number of unique state license numbers (the column labeled 3). This indicates that the problem of multiple UPINs per state license number predominates over the problem of multiple state license numbers per UPIN.

Since the problem of multiple UPINs per state license number appears to be the major problem in Table 3-9, the extent of the problem was further examined. For each state (rather than carrier), the number of UPINs per state license number was tabulated. The results of these tabulations are shown, by state, in Table 3-10. For Alabama, there were 9,965 state license numbers that were associated with just one UPIN and there were 16 state license numbers that were each associated with two UPINs. Similarly, in Minnesota, there were, for instance, 11,968 state license numbers that were associated with just one UPIN, 127 state license numbers associated with three UPINs, 15 state license numbers associated with seven UPINs, and one state license number associated with 32 UPINs. The results for Florida (14 UPINs associated with one license number) and Minnesota (16 license numbers with ten or more UPINs each) suggest that, for these specific examples, the value in the state license number data element is something other than a license number for an individual physician. As suggested earlier, these values might be a business tax identification number or a "group" state license number. Note that the results in Table 3-10 can not be directly compared to those in Table 3-9 because: (1) they were performed by two different classification methods, carrier in one case and state in the other and (2) Table 3-10 only examines one aspect of the problem of distinct UPINs and state license numbers whereas Table 3-9 summarizes net discrepancies.

TABLE 3-9

FREQUENCY OF UPIN/STATE COMBINATIONS WITH STATE LICENSE NUMBERS BY CARRIER, 1994

Carrier Identification Number	Carrier Name and Service Area	Number of Unique Combinations of State Licensed In and UPIN (2)	Number of Distinct State License Numbers within a State (3)	Absolute Value of (2) - (3) Divided by (2)
00720	Minnesota BC/BS, MN	6,064	4,658	0.232
00590	Florida BC/BS, FL	40,976	35,089	0.144
16360	Nationwide Insurance Co., OH	30,033	27,555	0.083
00870	Rhode Island Blue Shield, RI	3,430	3,201	0.067
01120	Aetna Life and Casualty, HI	3,093	2,916	0.057
00710	Michigan BC/BS, MI	27,927	26,341	0.057
00820	North Dakota BC/BS, ND-SD	3,209	3,040	0.053
01030	Aetna Life and Casualty, AZ	7,841	7,433	0.052
00640	Iowa BS, IA	7,852	7,458	0.050
01370	Aetna Life and Casualty, OK	5,577	5,303	0.049
16510	Nationwide Insurance, WV	5,583	5,330	0.045
00973	S.S.S., PR	6,131	5,881	0.041
00803	Empire BC/BS, NY	45,264	43,657	0.036
00528	Arkansas BC/BS, LA	10,056	9,714	0.034
00520	Arkansas BC/BS, AR	3,777	3,657	0.032
01040	Aetna Life and Casualty, GA	11,756	11,386	0.031
00751	Montana BC/BS, MT	2,211	2,144	0.030
01290	Aetna Life and Casualty, NV	2,614	2,536	0.030
00655	Kansas BS, NE	3,408	3,307	0.030
00825	North Dakota BC/BS, WY	1,128	1,100	0.025
00900	Texas BC/BS, TX	37,016	36,113	0.024
00860	Pennsylvania BS, NJ	22,649	22,128	0.023
00660	Kentucky BC/BS, KY	8,900	8,699	0.023
00630	Indiana BC/BS, IN	17,356	16,976	0.022
00801	Blue Shield of Western New York, NY	13,508	13,240	0.020
00951	Wisconsin Physician Service, WI	14,353	14,073	0.020
11260	Missouri General Am. Life, MO	7,435	7,291	0.019
01360	Aetna Life and Casualty, NM	3,320	3,259	0.018
10230	Travelers Insurance Co., CT	6,585	6,467	0.018
01380	Aetna Life and Casualty, OR	7,367	7,240	0.017
05440	Connecticut General Life, TN	12,649	12,440	0.017
10240	Travelers Insurance Co., MN	9,322	9,169	0.016
21200	Massachusetts BC/BS, ME	2,484	2,445	0.016
00621	Illinois BC/BS, IL	36,494	35,988	0.014
00880	South Carolina BC/BS, SC	8,601	8,482	0.014
00650	Kansas BS, KS	4,431	4,370	0.014
05535	Connecticut General Life, NC	15,020	14,815	0.014
00550	Colorado BC/BS, CO	9,495	9,366	0.014
00690	Maryland Blue Shield, MD	9,120	9,006	0.013

TABLE 3-9 (continued)

FREQUENCY OF UPIN/STATE COMBINATIONS WITH STATE LICENSE NUMBERS BY CARRIER, 1994

Carrier Identification Number	Carrier Name and Service Area	Number of Unique Combinations of State Licensed In and UPIN (2)	Number of Distinct State License Numbers within a State (3)	Absolute Value of (2) - (3) Divided by (2)
00542	California BS, CA	55,871	55,178	0.012
10250	Travelers Insurance Co., MS	4,028	3,981	0.012
14330	Group Health Insurance, Inc., NY	6,461	6,390	0.011
00910	Utah BC/BS, UT	4,153	4,110	0.010
01390	Aetna Life and Casualty, WA	13,465	13,329	0.010
00700	Massachusetts BC/BS, MA	16,487	16,333	0.009
01020	Aetna Life and Casualty, AK	1,112	1,104	0.007
10490	Travelers Insurance Co., VA	10,896	10,825	0.007
00580	Pennsylvania BS, DC	10,075	10,016	0.006
00780	Massachusetts BC/BS, NH	2,418	2,404	0.006
00740	Kansas BS, MO	4,380	4,358	0.005
05130	Connecticut General Life, ID	2,138	2,129	0.004
02050	Transamerica Occidental Life Ins., CA	48,740	48,557	0.004
00570	Pennsylvania BS, DE	1,690	1,685	0.003
00865	Pennsylvania BS, PA	40,850	40,744	0.003
00781	Massachusetts BC/BS, VT	1,176	1,174	0.002
00510	Alabama BC/BS, AL	9,983	9,967	0.002
00974	S.S.S., VI	6	6	0.000

SOURCE: Health Economics Research, Inc. tabulations of 1994 Physician Registry file.

TABLE 3-10

NUMBER OF UPINS PER UNIQUE STATE LICENSE NUMBER

State	Number of UPINs Per State License Number	Number of Unique License Numbers
Alabama	1	9,965
	2	16
Alaska	1	1,101
	2	8
Arizona	1	7,124
	2	361
	3	24
	4	1
	5	1
Arkansas	1	3,552
	2	121
California	1	100,795
	2	938
	3	9
	4	1
Colorado	1	9,282
	2	128
	3	1
Connecticut	1	6,366
	2	106
Delaware	1	1,670
	2	6
District of Columbia	1	3,354
	2	34
	3	1
Florida	1	30,677
	2	3,369
	3	869
	4	218
	5	23
	6	2
	7	2
	14	1
Maine	1	2,387
	2	35
	3	3
Maryland	1	12,541
	2	157
	3	9
	4	1
Georgia	1	11,044
	2	334
	3	16
	5	1
Hawaii	1	2,709
	2	145
	3	16
Idaho	1	2,134
	2	9
Illinois	1	35,533
	2	468
	3	12
	4	1
	5	1
	8	1
Indiana	1	16,658
	2	321
	3	19
	4	2
	16	1
Iowa	1	7,115
	2	337
	3	24
	4	3
Kansas	1	5,417
	2	76
Kentucky	1	8,503
	2	191
	3	5
Louisiana	1	9,424
	2	306
	3	16
	5	1
Mississippi	1	3,905
	2	46
	3	1
Missouri	1	9,956
	2	198
	3	2
	8	1

TABLE 3-10 (continued)

NUMBER OF UPINS PER UNIQUE STATE LICENSE NUMBER

State	Number of UPINs Per State License Number	Number of Unique License Numbers
Massachusetts	1	16,198
	2	155
	3	1
Michigan	1	24,913
	2	1,384
	3	79
	4	4
	5	2
	6	1
	10	1
	11	1
Minnesota	1	11,968
	2	536
	3	127
	4	70
	5	55
	6	20
	7	15
	8	8
	9	10
	10	6
	11	1
	12	3
	13	2
	14	1
	18	1
	30	1
	32	1
North Dakota	1	1,490
	2	74
	4	1
Ohio	1	25,489
	2	1,979
	3	282
	4	23
	5	1
Oklahoma	1	4,997
	2	245
	3	15
Oregon	1	7,207
	2	129
Pennsylvania	1	40,419
	2	91
	3	2
	13	1
Montana	1	2,094
	2	67
Nebraska	1	3,219
	2	97
	3	3
Nevada	1	2,515
	2	77
	4	1
New Hampshire	1	2,380
	2	13
	3	1
New Jersey	1	21,613
	2	479
	3	23
New Mexico	1	3,159
	2	57
	3	2
New York	1	55,299
	2	2,139
	3	422
	4	23
North Carolina	1	14,650
	2	187
Texas	1	35,355
	2	842
	3	27
	4	2
	5	1
Utah	1	4,130
	2	39
	3	2
Vermont	1	1 133
	2	3
Virginia	1	13,288
	2	88
	3	1
Washington	1	13,351
	2	113
	3	4
	16	1

TABLE 3-10 (continued)

NUMBER OF UPINS PER UNIQUE STATE LICENSE NUMBER

State	Number of UPINs Per State License Number	Number of Unique License Numbers
Rhode Island	1	3,008
	2	172
	3	27
	4	1
South Carolina	1	8,382
	2	104
	3	8
South Dakota	1	1,418
	2	72
	3	12
Tennessee	1	12,291
	2	188
	3	6
	4	3
	14	1
West Virginia	1	4,695
	2	192
	3	7
	4	1
	8	1
	10	2
	24	1
Wisconsin	1	13,823
	2	274
	3	2
	4	1
Wyoming	1	1,019
	2	28

SOURCE: Health Economics Research, Inc. tabulations of 1994 Physician Registry file.

3.6 Summary

We first review the key findings of the analyses of this chapter and then discuss their implications.

Key Findings

To determine the ability to link individual claims to specific practice settings in the Physician Registry, PINs found in 1992 claims data were compared to those in the 1993 Registry. The main results were:

- it was not possible to develop an algorithm to match PINs found in claims data with Registry PINs for six carriers representing nine states or coverage areas;
- there were 24 carriers with non-match rates exceeding ten percent;
- South Carolina BC/BS had the highest non-match rate at 74 percent;
- all of the claims' PINs could be found for only two carriers;
- For those claims for which a PIN could be found in the Registry, the UPIN/PIN match rate was usually equal to 100 percent.

Interviews conducted with carriers in 1993 revealed problems they had in maintaining up-to-date provider files.[8] An obvious concern is whether the activity status recorded in each practice setting in the Registry correctly reflects the setting's Medicare activity status. To test this, dates on 1992 claims were compared to the activity status of practice settings found in the 1993 Physician Registry (when there was a PIN/UPIN match). Methods and findings included:

- the last expense date on claims was compared to:
  - the date the setting was added for "active" practice settings or
  - the date the setting was de-activated for "inactive" practice settings;

[8] Health Economics Research, Inc. *Unique Physician Identification Number (UPIN) Validation Studies. Final Report.* HCFA Master Contract No. 500-92-0020, Delivery Order No. 5, February 7, 1995.

- of the claims analyzed for 30 carriers:

  - both of Nationwide Insurance Company's two areas had discrepancy rates greater than 20 percent and California BS had a discrepancy rate of 6.2 percent;

  - five other carriers had discrepancy rates between 2 and 3.4 percent; and 22 carriers had discrepancy rates of less than one percent.

To help provide contextual background information for an investigation of high-volume physicians, the professional and patient characteristics of physicians were tabulated and classified by the physician's volume during 1993. The results of the analysis were also used to help develop questions about difficulty in maintaining up-to-date provider records for the carrier interview protocol. Physician volume was defined on the basis of the number of line items. The main findings were:

- in contrast to low-volume physicians, high-volume physicians were more likely to be over age 70 and had primary care specialties; and

- in contrast to low-volume physicians, high-volume physicians had an older mix of patients, were more likely to order diagnostic laboratory services, were more likely to provide services in an office setting, and were more likely to have performed the services as a result of a referral.

Anecdotal information from HCFA and other sources suggested that there might be problems with the state license number data element in the Physician Registry. If the state license numbers in the Physician Registry are reliable, then linkage of Medicare UPIN and claims data to other data bases, such as the National Practitioner Data Bank, might be feasible. We documented the existence and extent of potential problems in the 1994 Registry, by carrier. The results were used during the carrier interviews and will be used in the interviews with state license boards and a re-examination, following the latter interviews, of state license numbers found in the Registry. Methods and main results included:

- several carriers used bogus physician license numbers when unable to obtain the actual number;

- discrepancy rates, as deviations from ideal circumstances, were based on:
  - more than one UPIN per state license number or
  - more than one state license number per UPIN within a carrier/state combination;
- Minnesota BC/BS had the highest discrepancy rate at 23 percent B they are no longer the carrier for the "Twin Cities" area;
- seven carriers had discrepancy rates between 5 and 14 percent while 13 carriers had discrepancy rates less than one percent;
- subsequent carrier interviews suggest that parallel numbering systems within states might account for many of the observed discrepancies B this possibility will be tested during the second half of the project.

Discussion

The analyses of claims and Registry data uncovered several problems, most particularly with the carrier-assigned PINs. While it is not currently possible to link all of the claims to the practice settings from which they originated, it is not possible to determine from the analyses whether performing UPINs were incorrectly attached to claims. Many analyses are, thus, still feasible if they do not require practice setting level information. In addition, at the instigation of HCFA's Bureau of Program Operations (BPO), the carriers and TOLIC have been engaged in a retroactive clean-up of Registry data. It is thus possible that data from 1996 and 1997 will be substantially better than in previous years. Nonetheless, even if future Registry and claims data has higher quality than the data analyzed in this report, this higher-quality data will not be very helpful to analysts relying on data from the early 1990s. Additionally, the inability to link PINs on claims to the Registry might hinder fraud and abuse investigations carried out by carriers and HCFA.

The analysis of state license numbers is exploratory and although possible problems were identified, they might be resolved through interviews with carrier and state licensing boards. The results of several new analyses of state license numbers will be presented in the final report.

4.0 CARRIER PROVIDER FILE MAINTENANCE AND CLAIMS PROCESSING

The findings from interviews with seven Medicare Part B carriers are presented in this chapter. The focus is on the maintenance of carrier provider files, claims processing, and the interaction between the provider files and claims processing. In addition, carrier responses to direct queries regarding specific data problems and puzzles found during the course of the preliminary analyses (Chapter 3) were obtained. The interviews were initially conducted from February through March 1996. Follow-up discussions with the carriers continued through May. The findings are presented in a consolidated format rather than by individual carrier. Notes on each of the interviews are in Appendix C of this report.

4.1 Introduction

The carrier interviews were motivated by several factors. These include the results of HER's previous analysis of Registry data, topics not thoroughly covered during the interviews conducted as part of HER's previous analysis of Registry data (e.g., claims processing),[1] and new problems documented in Chapter 3 of the current report. The goal of the interviews is to better understand (1) why inaccurate physician information is found in the Registry and (2) how inconsistencies can arise between Registry and Medicare claims data. The ultimate purpose of the information gained through the interviews is to understand the current limitations of Registry and claims data in supporting analytical studies and to provide HCFA with an overview of current carrier operations and their association with data problems.

4.2 Carriers Interviewed

The selection of carriers was based on several factors. They were:

- carrier's performance;
- at least one carrier from each shared system; and

[1]Health Economics Research, Inc. *Unique Physician Identification Number (UPIN) Validation Studies. Final Report.* HCFA Master Contract No. 500-92-0020, Delivery Order No. 5, February 7, 1995.

- geographical representation.

Primary consideration was based on the results of ranking each carrier's performance vis-à-vis other carriers. The ranking system was based on: (1) PINs located in claims data but not in the Physician Registry, (2) discrepancies between the last expense date (claims data) and the date of adding or deactivating a practice setting to the Physician Registry, and (3) discrepancies in the association between UPINs and state license numbers (Chapter 3). Carriers from the entire spectrum of rankings were interviewed.

One carrier was selected from each shared system. In 1995, carriers were associated with one of seven[2] shared systems: Optimum Systems Inc. (OSI), Multi-Carrier System (MCS), GTE Medicare System (GTEMS), VIPS Medicare System (VIPS), HCFA Part B Standard System (HPBSS), General American Medicare Standard System (GAMSS), and Pennsylvania Blue Shield Part B System (PBSPTB).[3] If a carrier changed its shared system affiliation within the last four years, it was excluded from the selection process.

Among the carriers selected, Alabama Blue Cross/Blue Shield (Alabama BC/BS) achieved the highest (best) ranking. Other selected carriers include MetraHealth of Mississippi (MetraHealth), Arkansas Blue Cross/Blue Shield (Arkansas BC/BS), California Blue Shield (California BS), Aetna Insurance Company of Georgia (Aetna), C&S Administrative Services of Massachusetts (C&S) and Xact Medicare Services of Pennsylvania (Xact). The list of interviewed carriers, their state (coverage area), and shared system are shown below.

Carrier	State	Shared System
Aetna	Georgia	GTEMS
Alabama BC/BS	Alabama	VIPS
Arkansas BC/BS	Arkansas	OSI
California BS	Northern California	MCS
C&S Administrative	Massachusetts	MCS
MetraHealth	Mississippi	HPBSS
Xact	Pennsylvania	PBSPTB

[2]There were seven shared systems at the beginning of 1995, however, the GAMSS shared system converted to the GTEMS system in October, 1995.

[3]Pennsylvania, the only member of PBSPTB, is switching to the GTEMS system in August, 1996.

4.3 Medicare Provider File

4.3.1 PIN Application

Providers who deliver medical care to Medicare beneficiaries must submit an application to a Medicare Part B carrier in order to receive a provider identification number (PIN) which allows them to bill and receive payment under the Medicare program. The application process can be initiated by a provider applying for a new individual or group practice setting or by an existing group requesting to add a new or existing provider to their group. In addition, a claim received from a provider without the proper billing number (Medicare PIN) may also initiate the application process.

Data elements required on the application form by the seven interviewed carriers are shown in Table 4-1. Most of the carriers interviewed require date of birth, social security number, tax identification number, name of medical school, year of graduation, state license number, copy of state license, medical specialty, board certification and signature. Only four ask whether the provider has a previously established UPIN or PIN. Four of the carriers do not ask for information regarding whether the provider has a PIN in another state. Since UPINs were established, in part, to prevent Medicare-sanctioned physicians from providing services to Medicare beneficiaries, it is of particular interest that not all carriers ask if the provider has ever been sanctioned or convicted of fraud. Of the data elements listed in Table 4-1, only Aetna requires all of the data elements while MetraHealth requires the fewest and is the only one that does not require a copy of the state license for MDs. MetraHealth indicated that they accepted the application information at face value.

Once the application has been received, it is screened for all required eligibility information. If any information is missing, staff maintaining the provider file calls or sends a letter to the provider requesting the information. An application can be denied if the missing information is not provided.

Carriers begin the verification process when the application has all the required information. A number of methods are used to confirm or verify the data on the application. For example, a provider's state license is verified in one of three ways: through submission of a hard copy of the license, calling the state license board, or by reviewing reports issued from license boards. Some states provide these data on microfiche while Arkansas BC/BS is able to access medical doctor and osteopath state license information on-line.

TABLE 4-1

REQUIREMENTS FOR MEDICARE PROVIDER NUMBER APPLICATIONS

	STATE/CARRIER*						
Field	AL	AR	CA	GA	MA	MS	PA
Name	X	X	X	X	X	X	X
Credentials	X	N/A	X	X	X	N/R	X
Business Address	X	X	X	X	X	X	X
Billing Address	X	X	X	X	X	X	X
Social Security Number	X	X	X	X	X	X	X
Tax ID Number	X	N/R^A	X	X	X	N/R^A	X
Date of Birth	X	X	X	X	X	X	X
Name of School	X	X	X	X	X	X	X
Year of Graduation	X	X	X	X	X	X	X
State License Number	X	X	X	X	X	X	X
Copy of License	X	X	X	X	X	N/R	X
Medical Specialty	X	X	X	X	X	X	X
Primary	X	X	X	X	X	X	X
Secondary	X	X	X	X	N/R	X	N/R
Previous Medicare Number (PIN)	N/R	X	N/R	X	X	N/R	N/R
Another State?	N/R	X	N/R	X	X	N/R	N/R
Previously established UPIN	X	X	N/R	X	X	N/R	N/R
Ever been Sanctioned	X	N/R	N/R	X	X	N/R	X
Convicted of Fraud	X	N/R	N/R	X	X	N/R	X
Board Certified	X	X	X	X	X	X	X
Present Affiliation	X	N/A	X	X	X	X	X
Group	X	N/A	X	X	X	X	X
Solo	X	N/A	X	X	X	X	X
Clinic	N/R	N/A	X	X	N/R	X	N/R
Other	N/R	N/A	X	X	X	X	N/R
Signature	X	X	X	X	X	X	X

NOTES:

*Carriers include Alabama BC/BS (AL), Arkansas BC/BS (AR), California BS (Northern CA), Aetna (GA), C&S Administrative Services (MA), MetraHealth (MS), and Xact Medicare Services (PA).

X indicates required field

N/R = Not required

N/R^ = Not required on the application itself, however, a separate W-9 tax form must be attached to the application.

N/A = Not Applicable. For purposes of this table, the application used by Arkansas was an individual (solo) MD application. Arkansas has different applications for each type of provider (e.g., MD, DO, DC, etc.)

Sanction status, which indicates whether a provider has been sanctioned by the Medicare program, is confirmed against the Office of Inspector General's Report provided to the carriers. Some carriers have the provider sanction list maintained on a PC database. This indicates to the carrier to flag the application from such individuals for special handling. Aetna uses the tax identification number (TIN) in their provider files and the TIN is verified by a copy of the applicant's tax notice from the IRS with the TIN matching the name of the applicant.[4]

After completing the process of screening and verifying the application information, the data are manually entered into an electronic database. A provider record is created, added to, or changed depending upon the type of application. Many of the database's provider screens are designed to match the Registry's required data fields. With some carriers, the data entered updates the provider file instantly and for other carriers it takes an overnight data processing cycle.

The entered data go through an editing process of logical checks and quality assurance checks. The editing is conducted either during the process of entering the data or as a post-entry function. Generally, logical data checks are designed to simply verify that values are within an allowable range or have the correct sequencing of alpha-numeric characters. Many of the online edits are designed to verify the correct length and type of characters for the field but not necessarily whether the information is accurate or not. An example of a logical data edit used by some of the carriers is when a school code is entered with a letter instead of the required numeric character. The system will reject the letter. However, if a school code is entered with a numeric character but the wrong numeric character (transcription error) this error of fact may pass the logical data check. Another example of a transcription error that may have greater consequences is the state license number field. Since several of the carriers' systems only edit for the correct character field length for both levels of data entry; new provider records and updates to a provider's record, the opportunity for multiple UPINs to be associated with one state license number exists.

Many carriers rely on intensive manual procedures for data entry and post-entry data quality control. The implication is that those errors of fact that have passed the logical data check may or may not be detected in the quality assurance process. Thus, factual data errors may be sent to the Registry.

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[4]Applicant may be an individual or group.

Prior to each interview, carriers were given examples of more than one UPIN associated with one state license number on the Registry file (Table 4-2). Prior to Aetna's contract as the Part B carrier for Georgia, the previous carrier (Prudential) assigned the license number 000000000999 as a "dummy" license number as license numbers were not required on provider applications. In 1992, Aetna mailed surveys requesting current state license information from all providers whose file contained the dummy license number.

Since Alabama's license boards act independently, they may assign the same license number. That is, a medical doctor may have license 1234 while a dentist may have the same identical number. Alabama BC/BS does assign internal prefixes to the numbers to identify the differences in license boards. These prefixes, however, are not transmitted to the Registry because Alabama BC/BS can only send valid, legal licenses as they are assigned by the license board. This explains the first three pairs of license numbers in Alabama BC/BS's list.[5] For Jose Vargas, this physician applied for a provider number with two separate carriers, Alabama BC/BS and Puerto Rico. Because of the misspelling of his name, he was issued two UPINs.

In some cases, identity problems are responsible for multiple UPINs associated with a license number. Arkansas BC/BS stated that in the case of Harold Hedges, there are actually two different people. There are several practice settings for Harold IV listed under the UPIN for Harold Sr. Arkansas BC/BS is investigating and correcting this problem. Another problem occurs when a provider is assigned two UPINs in error. With regard to the two UPINs for Kelli Sanders, Arkansas BC/BS stated that this problem was corrected after 1994 and Kelli Sanders currently has one UPIN (F64056).

There are several methods of post-entry data screening and editing performed by the carriers to ensure that adds and updates to the provider records are accurate. Most of these methods of performing quality assurance of data entry involve extensive manual review. Errors are resolved using post-entry system-generated reports which can be compared to either the online provider screen and/or the application form. Since these quality assurance reports are often random samples of the provider records, errors may not be detected and thus could be sent to the Registry. Arkansas BC/BS stated that another method of correcting data entry errors is to wait until after the provider records have been sent to the Registry and simply examine the

[5]The "C" prefix on UPINs indicates medical doctors and the "T" prefix indicates other physicians. An analysis in the Final Report will take the above findings into consideration as the analysis of state license numbers is extended.

TABLE 4-2

EXAMPLES OF STATE LICENSE NUMBERS WITH MORE THAN ONE ASSOCIATED UPIN

License as Submitted to Registry	Reformatted License	UPIN	PIN	Last Name	First Name	Middle Initial	School Code	Specialty
Aetna Insurance Co. (GA)								
000000000999	000000000999	C36473	265806711A	WINTERS	DAVID	R	02878	08
000000000999	000000000999	D28812	260801580A	ARKIN	DAVID	B	01205	11
000000000999	000000000999	D30742	295461873B	SCHNELL	FREDERICK	M	03806	83
000000000999	000000000999	D44697	276563703B	ALEXANDER	JOEL	J	03875	07
Alabama Blue Cross/Blue Shield (AL)								
000000002627	000000002627	C78986	00000184500000	DOWLING	EDMUND	A	99999	22
0000002627	000000002627	T68748	00009382400000	KEAHEY	JOHNNY	R	20000	19
0000002690	000000002690	C74674	00000105100000	CARTER	JOHN	C	00102	16
0000002690	000000002690	T68786	00009553200000	PROPST	CHARLES	D	20000	19
000000002812	000000002812	C74621	00000021600000	BALLARD	FRED	C	00102	16
0000002812	000000002812	T68753	00000398500000	MARTINEZ	MARIO	G	20000	19
0000007230	000000007230	C79430	00006551600000	VARGAS LOPEZ	JOSE	M	99999	11
000000007230	000000007230	D83860	00006765700000	VARGAS	J	R	99999	11
000000007230	000000007230	D83860	00000735300000	VARGAS	J	R	99999	11
Arkansas Blue Cross/Blue Shield (AR)								
C6616	0000000C6616	B90286	522920084	HEDGES	HAROLD	H	00401	08
0000000C6616	0000000C6616	C68480	523037641	HEDGES	HAROLD		00401	08
0000000C6616	0000000C6616	C68480	523037179	HEDGES	HAROLD		00401	08
0000000C6616	0000000C6616	C68480	523036884	HEDGES	HAROLD		00401	08
0000000C6616	0000000C6616	C68480	523037666	HEDGES	HAROLD		00401	08
0000000C8464	0000000C8464	F64056	5J193	SANDERS	KELLI	K	00401	08
0000000C8464	0000000C8464	F64056	5J1937179	SANDERS	KELLI	K	00401	08
0000000C8464	0000000C8464	F64058	5J1937666	SANDERS	KELLI	K	00401	08

NOTE: This analysis is based on 1994 data, and may not reflect recent changes.

SOURCE: Physician Registry, April 1994.

Registry's exception report that is returned with the carrier's provider records. As stated by most of the carriers, because their provider records are designed to match the Registry files required data fields a certain level of quality assurance edits are performed in effect, on their behalf by the Registry.

4.3.2 PIN Assignment

After a provider's application requesting a Medicare provider number has been approved, the carrier assigns the provider identification number (PIN). The PIN is assigned during the process of entering all of the required provider application information into the database.

The establishment of practice settings in carrier-maintained provider files and in the Registry varies among carriers. Xact currently establish only one practice setting per payment locality regardless of the number of offices physicians maintain within the locality. Alabama BC/BS, conversely, establishes a practice setting for every office maintained by a physician within a payment locality. This variation is due to different interpretations of the Carrier Manual's rules regarding physician identification and registration. Differing interpretations are not limited to the carriers, but also occur among HCFA staff and outside consultants. The source of the differing opinions appears to be whether the data collection rules *require* that a practice setting be established or whether the data collection rules apply only *when* a carrier decides to establish a new practice setting.

Two of the seven interviewed carriers, Alabama BC/BS and California BS, assign a PIN for each individual practice setting maintained by a solo practitioner within the same payment locality (Table 4-3). The basic policy of five of the carriers is to issue one PIN to a solo practitioner regardless of the number of individual practice settings a physician may have within the same payment locality. Three of the five carriers do make exceptions to this policy based on their provider application procedures. C&S and Arkansas BC/BS will issue an additional PIN within the same payment locality if the provider requests it in order to have his/her payment sent to another address. Since Aetna uses the provider's Tax ID number as an identifier in their provider system , if a provider uses more than one Tax ID for billing purposes, within the same payment locality, he/she would be assigned an additional PIN. For some of the carriers who

TABLE 4-3

PIN CHARACTERISTICS FOR SOLO AND GROUP PRACTICE SETTINGS BY CARRIER

Characteristic	STATE*						
	AL	AR	CA	GA	MA	MS	PA
One PIN assigned per each individual practice setting within the same payment locality	X	X[A]	X	X[B]	X[A]		
Different PIN per each payment locality	X	X	X	X	X	X	X
One PIN per each group practice setting	X	X	X	X		X	X
PIN assigned to group practice setting sent to Registry	X	X	X	X	X	X	X
System generated PIN number			X			X	X
Manually assigned PIN number	X	X	X[C]	X	X	X[D]	
Intelligence built in PIN number			X	X		X	
specialty code				X		X	
locator code			X			X	
state license number			X				
Character length of individual PIN	9	5	9	7[E]	6	9	8
Character length of group PIN	9	9	9	7	6	9	14

NOTES:

*Carriers include Alabama BC/BS (AL), Arkansas BC/BS (AR), California BS (Northern CA), Aetna (GA), C&S Administrative Services (MA), MetraHealth (MS), and Xact Medicare Services (PA).

X = Yes

[A] Additional PINs are assigned at the request of the provider.

[B] If a provider has multiple tax ID numbers, he/she will be assigned multiple PINs.

[C] Non-MD PINs are manually assigned.

[D] Hospital-based MD PINs are manually assigned.

[E] PINs are 7 characters in length for solo and group, however, the format is different. Group PINs start with GRP, solo PINs start with two numbers.

assign just one PIN to physicians with multiple individual practice settings within the same payment locality, there was no indication that there was an internal coding system to associate a physician's claims activity to each separate individual practice location.

Although carriers may not issue separate PINs for each practice setting when a physician has more than one, they generally keep track of the address of each location. This is accomplished, in some cases, through separate records contained in the provider file. The records, in such cases, are linked to physicians through internal codes. In other cases, the addresses are contained in "memo" fields within the physician's record. While the carrier's provider file might maintain each location as a separate practice setting, some carriers send "practice setting records" to the Registry even though the number in the PIN field ("pseudo-PIN") is not actually used in billing (see below). This results in practice settings present in the Registry for which there is no claims activity associated with the pseudo-PIN.

Six of the carriers interviewed assign a PIN to an individual provider in each group practice setting. Many of the carriers link the individual to the group through a coding system built into the PIN. For example, Xact's fourteen character PIN assigned to a group physician includes six digits of the group number, and the remaining eight digits are unique to the individual provider. Arkansas BC/BS's number for an individual provider with a group is extended from the five digit individual PIN to nine digits, with the last four digits denoting the group number. If there is no group code built into the provider identification number, some of the carriers assign an internal group number to the provider's record/file in order to cross reference the provider to that group.

Several of the carriers have intelligence built into their provider identification numbers. Some of the numbering systems issue PINs sequentially and some randomly. For example, C&S assigns their PINs from a log book with a code built in to identify the type of provider (e.g., MD). MetraHealth's PINs are assigned by the system, with the number beginning with a two digit code designating the provider's specialty, followed by a core number and a locator code. Xact and Alabama BC/BS assign PINs within ranges of numbers signifying the type of provider (suppliers, labs, MD). California BS uses the provider's state license number as the core of the PIN followed by a locator code denoting additional settings. PINs assigned by Aetna (GA) use the provider's specialty code for the first two digits followed by five consonants in a sequential format.

Approximately half of the carriers manually issue the PIN and the others have an on-line system to generate PINs.

All of the carriers send a group practice setting record to the Registry for each group practice an individual provider joins. In addition to the group's PIN and the individual PIN, the record may include another number used by some carriers to "link" the provider to the group. While this number is sent to the Registry, it is used for internal purposes only and is not used in claims processing, the individual PIN is used. California BS began assigning internal numbers, which begin with a G, after the expanded UPIN project. Their internal "G" number is part of their PIN to UPIN crosswalk. Consequently, many of the practice settings found in the Registry will not have claims activity associated with them. Crosswalks supplied by carriers to HCFA, therefore, may have limited usefulness. Specifically, it might be difficult to link PINs on claims to the Registry.

4.3.3 Provider File Maintenance

For most of the carriers, the provider file is designed to include all of the Registry's required data fields. All of the carriers are consistent in their policy requiring that any change to the provider records must be requested in writing by the provider or a representative of the provider. Changes that affect the required Registry information are sent to the Registry as an update record. With some carriers, changes entered into the provider file database are updated immediately while other carrier databases take an overnight system cycle to effect the change.

There are a number of ways the carriers ensure the provider's information is accurate and up-to-date. Most of the carriers conduct group surveys yearly to monitor each group practice membership roster. Several carriers monitor provider information in general continuously by actively working their returned mail, receiving feedback from the Medicare participation directory updates and provider relations representatives, and by notifying the provider community of Medicare guidelines through provider newsletter mailings.

All of the interviewed carriers monitor provider claims activity to ensure that provider practice status is accurate. Medicare requires a carrier to send a deactivated record to the Registry if a provider has no claims activity within three years. The carriers vary slightly, in their administration of the time policy for claims inactivity, from one to three years. Many of the

carriers use system generated reports to monitor the provider claims activity. In addition, returned mail and notification from the Registry regarding a deceased provider are other ways to prompt deactivation of a provider's PIN.

The policy of reissuing a deactivated PIN varies among the carriers interviewed. Most carriers will reissue the original PIN to the same provider if he/she notifies the carrier that they are in practice. The provider, however, must reapply through the application process. Only one carrier, Xact, will reuse a previous provider's PIN and assign it to another provider after six months from the deactivation date. MetraHealth does not have a set policy. They may reissue a provider his/her previous number or assign a new PIN in the event the physician changes his/her specialty. Alabama BC/BS will reissue the same PIN if the provider returns to the same practice location. If the provider relocates, however, they would be assigned a new PIN. Some of the carriers actually purge deactivated PINs from their files. For example, C&S notifies inactive providers that the PIN is to be deactivated in their system after ten days from the contact date unless they are notified otherwise.

Any change to the provider's files that affect the Registry's data requirements are sent to the Registry as an add or update record setting. Record transmissions vary from daily to once a week depending upon the carrier.

4.4 Claims Processing

To better understand the claims data for research purposes, the following key functions were addressed:

- claims data verification methods;
- protocols for claims with missing information; and
- common practices across carriers.

4.4.1 Claims Submission

Carriers usually receive claims either electronically or on paper (hard copy). C&S Administrative Services and California BS also accept faxed claims. Four carriers receive at least 80 percent of their claims electronically, while the other three carriers receive approximately 75 percent of their claims electronically.

According to Medicare guidelines, claims must be submitted within 24-27 months from the date of service.[6] However, claims submission time limits and the administration of processing claims received after the defined time limit vary among the carriers. For example, some carriers allow claims submission from 18 to 27 months from the date of service.[7] Some carriers will make exceptions and accept claims after their standard time limit; however, a penalty is applied and the claim is paid ten percent less. Most of the carriers will process a claim retroactively (these claims are usually exceptions). For example, if a provider did not have a PIN at the time of the service (but has an active PIN at the time of the claims submission), most of the carriers will process the claim retroactively eighteen months prior to the effective date of the provider's participation with Medicare. This policy explains why, in reviewing claims data, the date of service was inconsistent with the date a provider's practice setting was added to the Registry. In accordance with Medicare guidelines, once the claim has been received it must be processed and payment made to the provider and/or beneficiary within 13-30 days for electronic claims and 27-30 days for a hard copy claim.

Claims submitted on the HCFA 1500 form are manually entered into electronic databases. Some carriers have the capability to electronically scan and screen paper claims, which must be typewritten or computer generated in order to be scanned. For example, C&S's system scans the claim and saves the data to a high-density optical disk.

4.4.2 Screening of Required Claims Information

When a claim is submitted from a provider, the claim is screened for the presence of the required information in the claim data field, not necessarily whether it is accurate. Some of the key claims data that are required on all claims include: PIN, CPT codes, diagnosis codes, place of service, the provider name, and the provider's address.

If a claim is submitted with missing or invalid information, the claim is either denied or suspended depending upon the type of information missing (PIN versus CPT code), the type of claim (electronic versus hard copy) and whether it is an assigned or a non-assigned claim. A

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[6]Extension for filing claims may be granted due to errors or misrepresentation.

[7]In order to receive 100% payment, California BS and Alabama BC/BS require claims be submitted within 12 months from the date of service.

claim submitted without a PIN leads to automatic denial. A claim without a CPT code is suspended, meaning that the claim is held in the claims processing system in a suspense status, while the carrier contacts the provider, either by phone or letter, to obtain the missing information. All suspense claims requiring additional information or development are held up to 45 days. If the missing information is not obtained by the time limit, the claim is denied.

Six out of the seven carriers deny an electronic claim submitted without a PIN. There is an exception with MetraHealth due to limitations within their claim processing system. MetraHealth suspends its electronic claims with no PIN because their system must have a PIN entered in order to deny the claim. If the PIN is not received within 14 days, the claim is deleted from their system.

Five of the seven carriers suspend hard copy claims (HCFA 1500) without a PIN and request the appropriate or missing information from the provider. If the information is not received within 30 days the claim is denied. Xact denies hard copy claims without a PIN and Aetna deletes the hard copy claim from their system and returns it to the provider requesting the missing PIN.

Non-assigned claims with a missing PIN, which represent only about two percent of each carriers' claims volume, are usually held in suspense while provider file staff obtain information from the provider. MetraHealth, for example, sends an application to the provider, and if no response is received a surrogate PIN will be used. In rare cases, e.g., out of country claims, C&S uses a surrogate PIN on non-assigned claims and makes payment to the beneficiary.

If a claim is received for the following HCFA type of services (TOS): consultative (TOS code 3), diagnostic radiology services (TOS code 4) and diagnostic laboratory services (TOS code 5), as well as durable medical equipment and other miscellaneous services including orthotics and prosthetics, the UPIN and name of the physician who ordered or referred the item or service must be shown in fields 17 and 17a on the HCFA 1500 claim form. Further, if the performing physician is also the referring provider, then his/her UPIN and name are required in fields 17 and 17a of the HCFA 1500.

If the referring/ordering UPIN is missing on these types of claims the claim is denied. If the ordering/referring physician has not been assigned a UPIN, the biller may use a surrogate UPIN (i.e., OTH000) until an application for a UPIN is processed and a UPIN assigned. All of the carriers have and provide the HCFA directory of all UPINs including surrogates, to the provider

community. It is used by laboratories, suppliers and physicians who are required to identify the referring/ordering physician on the claim form. Most of the carriers frequently monitor the use of surrogate UPINs through system generated reports.

4.4.3 Verification of Required Claim Information

Among the carriers interviewed, only Alabama BC/BS verifies that the PIN belongs to the provider's name on electronic and hard copy claims. For electronic claims, there is a check of an alternate billing file that matches the first three letters of the provider's name. If a paper claim is submitted, Alabama BC/BS checks with the provider file by manually entering the first three letters of the provider's name to match the PIN in the provider file to the PIN on the claim. MetraHealth verifies the PIN on group claims by matching the individual PIN to the group PIN number. There is no verification process established by any of the carriers to verify that the correct referring UPIN is submitted on the claim. However, some carriers verify the correct format, active status, and sanction status of the referring UPIN.

Some of the other claims information such as place of service, diagnosis code, and CPT code are verified through edits built into the claims processing systems. For example, Alabama BC/BS has system edits to ensure that all CPT codes match the specialty assigned to it to ensure that the provider is billing for services within his/her specialty.

4.5 Interface Between Provider File and Claims Processing

As previously discussed, all providers must have a provider identification number (PIN) and a unique provider identification number (UPIN) in order to bill and receive payment under the Medicare program. Approval of a provider's application and assignment of a PIN results in the creation of a record in the provider file. This file is the basic source of information used to support claims processing. An example of the type of provider record information used to process a claim includes: provider specialty, practice locality, billing address, and participation status.

Each carrier emphasized that their provider file is created and maintained by 'dedicated' provider file staff, and that no other personnel, including the automated claims processing system, can create or make changes to the provider records. Changes to the provider's record are

made upon receipt of a written request from the provider. There are some changes (e.g., DRIP status), that can be initiated by the carrier. Critical to accurate claims processing is the accurate and timely updates to the provider's record. Ultimately, an accurate, up-to-date provider file is in part, dependent upon providers notifying carriers of changes. The carriers also must do their part by performing ongoing provider maintenance, i.e., group membership surveys.

The automated claims processing systems are not designed to recognize conflicts between information in the provider file and information on the claim - therefore, no changes are made to the provider file. For example, if the address listed on the electronic claim is different from the provider file records, no change is made during automated claims processing. On the other hand, conflict of provider and claims information on a manual claim might possibly initiate an update to the files. This is dependant upon the claims examiner recognizing the conflict and taking action to forward a request to provider relations to follow up with the provider and verify the conflicting addresses. In any event, many of the carriers stated that it is rare to receive updates in provider information from claims processing.

Examples from an analysis focusing on the consistency between the last expense date on claims with the *Deactivate, Resident/Intern Practice* code (also known as the DRIP status) on the Registry, were sent to each carrier (Table 4-4) - see Chapter 3 for details.

Alabama BC/BS explained that providers are allowed to render services prior to being assigned a provider number. In the case of William Thornhill, his practice setting was added to the Registry on February 10, 1993, even though the last expense date from a submitted claim was October 12, 1992. However, Alabama BC/BS explained that the claim was submitted on February 26, 1993 (the first two digits of claim control number 93057302946000 represent the year and the third through fifth digits represent the day of the year). Because providers are allowed to retroactively submit claims, this particular claim was submitted after the practice setting was added to the Registry.

For Percy Howard, Alabama BC/BS's review of the claims data revealed that the dates of service on the claims were November 23, 1992, and Dr. Howard's PIN #3043 was canceled effective December 1, 1992, so it was appropriate to process the claims since services were incurred prior to the deactivation date of this practice setting. The provider informed Alabama BC/BS of his intent to retire as of November 30, 1992, and the UPIN registry records reflect this date.

TABLE 4-4

DISCREPANCY BETWEEN CLAIM AND REGISTRY DATES

INFORMATION FROM CLAIM			INFORMATION FROM REGISTRY							
Carrier Claim Control Number	Last Expense Date	PIN Submitted on Claim	Reformatted Registry PIN	UPIN	DRIP Status	PHYSICIAN NAME Last	PHYSICIAN NAME First	Registry PIN Prior to Formatting	Date Practice Setting was Added to Registry	Date Practice Setting Last Changed
Alabama Blue Cross/Blue Shield (AL)										
93057302946000	10/12/92	000087960	000087960	C86766	P	THORNHILL	WILLIAM	00008796000000	02/10/93	02/10/93
93046305759000	08/31/92	000073814	000073814	T68866	P	BRAUN	RANDELL	00007381400000	10/19/92	02/10/93
92338303457000	11/23/92	000003043	000003043	C70769	D	HOWARD	PERCY	00000304300000	03/22/89	11/06/92
92338303456000	11/23/92	000003043	000003043	C70769	D	HOWARD	PERCY	00000304300000	03/22/89	11/06/92
			000092028	C70769	P	HOWARD	PERCY	00009202800000	04/14/93	
			000092034	C70769	P	HOWARD	PERCY	00009203400000	04/14/93	
MetraHealth (MS)										
0932840008758	12/13/92	930000173	930000173	D75181	P	FORD	EDWARD	930000173	08/03/93	08/03/93
			080001503	D75181	P	FORD	EDWARD	080001503	10/22/92	
0923520009104	11/16/92	261261615	261261615	C48436	D	WELCH	WILLIAM	261261615	07/12/89	05/01/90
0922160013013	06/26/92	261261615	261261615	C48436	D	WELCH	WILLIAM	261261615	07/12/89	05/01/90
0922160013585	06/11/92	261261615	261261615	C48436	D	WELCH	WILLIAM	261261615	07/12/89	05/01/90
0923570003571	11/17/92	261261615	261261615	C48436	D	WELCH	WILLIAM	261261615	07/12/89	05/01/90
			260000017	C48436	P	WELCH	WILLIAM	260000017	03/15/89	12/15/92

SOURCE: 1992 Part B claims and October 1993 Registry.

MetraHealth stated that Edward Ford provided services prior to the establishment of PIN 930000173. Once his practice setting with PIN 930000173 was added to the Registry, Dr. Ford retroactively submitted the claim(s) for services rendered on December 13, 1992. In the case of William Welch, MetraHealth did not have an explanation for the discrepancy, other than to suggest the DRIP field status was in error - a claim that we can not verify. They stated that PIN 261261615 was currently active and should have been active at the time of the analysis. (MetraHealth stated that they added an automated capability that changed the DRIP status in 1993).

4.5.1 The Role of The PIN

For purposes of claims processing the PIN has several uses. Its use is dependent upon how each carrier defines a practice setting and assigns the PIN(s). The PIN can refer to a group practice, an individual practice or one of several practice settings. How the PIN is used in billing by the provider is critical in capturing accurate claims activity. A PIN is required on all claims to ensure that the provider is eligible to bill and receive payment under the Medicare program.

As discussed in Chapter 3, many PINs on NCH claims could not be found in the Registry. Conversely many PINs found in the Registry did not have claims activity - a phenomenon that could not be solely explained by the DRIP status, that is, a de-activated setting.

Carriers were sent an analysis of PINs located in the Part B claims but not in the Registry and vice-versa (Table 4-5). Arkansas BC/BS assigns every physician a five character individual PIN, even when the physician is strictly a group practice member. In the case of PIN 51132, this is the individual PIN belonging to a physician in a group practice. Since the physician did not submit any claims from a individual practice, the PIN was deleted from the carrier's file but was not deleted from the Registry. Arkansas BC/BS also stated that deactivated PINs might have been deleted from their system, thus explaining why PINs may be located in the Registry but not in the Part B claims.

Some carriers have experienced a transition in the assignment of PINs. In 1988, Aetna replaced Prudential as the carrier for the state of Georgia. Because of the change in carriers, PINs have two distinct types of formats. Prudential used the physician's social security number with a

TABLE 4-5

COMPARISON OF PIN DATA BETWEEN PART B CLAIMS AND REGISTRY FILES

PART B CLAIMS			REGISTRY	
UPIN	PIN	LINE ITEMS	UPIN	PIN
Arkansas Blue Cross/Blue Shield (AR)				
A12853	511327575	3,157	A12853	511327575
A12853	511327941	130	A12853	511327941
A12853	511327979	7	A12853	511327979
			A12853	51132
			A12853	511320020
			A12853	511326698
			A12853	511327918
			A12853	511327974
Aetna Life and Casualty (GA)				
A97181	16BDBLH	19	A97181	16BDBLH
A97181	16BDCRW	63		
			A97181	107609422A
B02566	204346257B	64	B02566	204346257B
B02566	2043ło257D	5,783	B02566	204346257D
			B02566	204346257A
			B02566	204346257C
			B02566	02BDBCF
MetraHealth (MS)				
B26306	061260219	40	B26306	061260219
B26306	112816624	4,576	B26306	112816624
B26306	080260882	12	B26306	080260882
			B26306	110000084
			B26306	080260784
			B26306	110261584
B29936	112799907	4,070	B29936	112799907
B29936	993000001A	15		
			B29936	061261435
Xact Medicare Services (PA)				
A13181	000057613	70	A13181	00576130436082
A13181	000137601	46		
A13181	000175923	1,028	A13181	01759230436082
A13181	000436082	21	A13181	00000000436082
			A13181	04241500436082
			A13181	05302720436082

SOURCE: 1994 Registry and 1993 Part B claims

letter suffix. Aetna attaches a specialty code to its PIN. Aetna stated that both formats of PINs are used and there has not been any problems associated with the two distinct types of PINS.

MetraHealth stated that one possible reason why three PINs associated with UPIN B26306 were not found in the Part B claims may be due to the deactive status of the PINs. MetraHealth also stated that the PIN 993000001A is a group PIN and belongs to Metropolitan, a managed care organization based in Ohio. Claims were paid under that PIN, however, the PIN was not transmitted to the Registry. MetraHealth stated they did not experience many claims with this type of PIN.

Xact Medicare Services stated that hospital-based PINs may not be located in the Registry. For example, PIN 00576130436082 is a hospital-based account. The first seven digits (0057613) belong to the group, and the last seven digits (0436082) belong to the individual provider. A possible explanation why PIN 000137601 is not located in the Registry may be the result of services being submitted incorrectly, and the claims should have been submitted to the Part A intermediary and not the Part B carrier.

For those carriers who assign a PIN for each practice setting, it is important that providers use the appropriate PIN assigned to its respective practice setting to accurately represent claims activity. The interviewed carriers did not have a system in place to ensure that the PIN matches the provider name, or that the PIN used in billing accurately reflects the practice setting address; therefore, there is the potential for processing claims from billers who misuse PINs. For example, an emergency room physician may be assigned a PIN for each individual practice site, however, it is up to the discretion of the physician to use only one of his/her PINs to bill for services rendered at all practice sites.

Several carriers indicated the possible misuse of an individual PIN by multiple providers. It was stated that this occurs mostly with hospital-based physicians, where a group of radiologists or pathologists may all bill under one PIN. The implication is that claim systems that do not match the billing PIN to the billing provider name may not have claims data accurately reflecting the correct provider of services.

4.5.2 The Role of The UPIN

For purposes of claims processing the UPIN is used to identify physicians making referrals and to map the performing PIN to the correct performing UPIN.

As stated earlier in section 4.2, billers are instructed to provide the UPIN of the referring/ordering physician in claim field 17A for HCFA types of service codes 3, 4, 5 and DME. These are the types of service codes that are routinely edited to ensure the required referring UPIN is provided. Otherwise, a claim is accepted without a referring UPIN, since not all services are a result of a referral. All interviewed carriers administered this Medicare requirement.

The performing UPIN is not required on the claim. Since it is not submitted on the claim, it is attached to the claim automatically during claims processing before it is sent to the Common Working File (CWF). If there is no performing UPIN found to match to the PIN, it may be the carrier is waiting for a UPIN assignment from the Registry. In that case, the claim would be suspended and developed to obtain the UPIN. The carriers stated that any claim sent to the CWF without a performing UPIN would be returned with an alert message, a check, to ensure that the National Claims File (NCF) has a performing UPIN with every claim.

None of the interviewed carriers maintain a distinct PIN-to-UPIN crosswalk separate from the provider file. Most of the carriers stated that they would access their provider file to obtain a mapping of PIN-to-UPIN. Depending on their system, some carriers are able to perform the crosswalk instantly, while others must request special reports to perform a cross-walk.

4.6 Discussion

The carriers were generally very receptive to the interview requests and coordinated their staff to meet scheduled times. However, due to time constraints and carrier obligations, we were unable to interview the appropriate carrier personnel in some instances. Several carriers cited that there have been operational and procedural changes made since the data analysis time period, as well as major staff turnover. Therefore, some carrier practices may have changed between the period from which we obtained our data (1992 through 1994) and period in which the interviews were conducted (Spring 1996). Staff turnover also might have affected the quality the information obtained though the interviews since some of the current personnel lack historical knowledge of the organization.

Relative to site visits, phone interviews are a more challenging format through which to conduct interviews because the normal "give and take" of face-to-face discussions is not present. Since the phone format is not conducive to respondents delivering long descriptions of their procedures, it is more necessary to ask specific questions. Similarly, carrier responses during phone interviews are often harder to understand than during site visits. As a result, it was easier to obtain accurate information on the more "technical" areas of operation than on those aspects of carrier operations which have fewer set procedural guidelines. This required extensive follow-up questioning at later dates - to which some carriers were more cooperative than others.

Key Findings

Several key findings resulted from the carrier interviews. Following are the key findings relevant to data quality and analytical issues:

- errors can arise in the provider file and, hence, in the Physician Registry because:
  - online edits during data entry are typically used to only check the data format and
  - post-entry data edits are typically performed on random samples rather than on all new or changed records;
- PINs of performing physicians are not checked to verify that the proper PIN for the physician was entered on the claim;
- some states have parallel state license numbering systems for each physician type; this practice, thus, gives the impression that a given license number is assigned to more than one physician;
- Xact (Pennsylvania BS) may re-assign, after six months, de-activated PINS previously issued to solo practitioners - the other interviewed carriers did not mimic this practice; and
- carriers vary considerably in their criteria for establishing practice settings in their provider files and in the information transmitted to the Physician Registry.

During claims processing:

- carriers will often accept claims for services provided well before the establishment of a practice setting in their provider file. The carriers do this only if, at the time that the claim is actually submitted to the carrier, at least one other practice setting has been established for the physician.

- The interviewed carriers do not maintain distinct PIN-to-UPIN crosswalks separate from the provider file. Performing UPINs and other data elements (e.g., primary specialty) are attached to claims directly from the provider file during claims processing.

- Occasionally Part A claims are inadvertently processed as Part B claims. This results in claims' PINs that can not be found in the Physician Registry.

- Some carriers send "internal" PINs to the Registry. These internal PINs, however, are not used for billing purposes by physicians and thus do not appear in Medicare claims data.

Implications

The above findings have important consequences for researchers using Physician Registry data either separately or when used in conjunction with Medicare claims data. For instance, because of carrier variation in the establishment of multiple practice settings on the Physician Registry, reliable counts of the number of offices maintained by physicians can not be obtained. The practice of some carriers of establishing multiple practice settings on the Physician Registry, but only issuing one billing PIN to physicians can cause problems for researchers. In such situations, it is not clear which of the "practice settings" is the source of data elements (e.g., specialty) that are crosswalked from the provider file to claims. Similarly, the activity status of a practice setting on the Physician Registry can not be verified by independent researchers by checking for the existence of claims data in such situations. The claims data would not permit the differentiation of practice sites.

Because of Xact's practice of re-assigning PINs, researchers can not use PINs by themselves to locate a specific practice setting in the Physician Registry, a UPIN/PIN combination should be used instead.[8] Further, re-assignment of PINs means that crosswalks derived from carrier provider files might not be as useful to researchers as they could be since

[8]Even this may not be sufficient since HER found some 3,000 cases in the Physician Registry with identical UPIN/PIN.

the crosswalk file is unlikely to have both UPIN/PIN combinations. Some claims, thus, would not be able to be linked to the Registry. The problem of multiple UPINs per state license number may be reduced through combining physician credentials with the license number when conducting research based on license numbers.[9]

An important finding was that carriers do not verify that performing PINs recorded on the claim belong to the physician or group submitting the claim. This practice may allow fraudulent claims to avoid discovery by carriers during claims processing. At the very least, this practice can hinder fraud and abuse investigations conducted by carriers and HCFA.

Since HCFA's guidelines regarding the establishment of practice settings seems open to interpretation, HCFA may want to reconsider revising its guidelines to reduce variation in carrier practices. The upcoming commencement of operations of the new Medicare Transaction System (MTS), scheduled for 1999, may provide HCFA with an opportunity to review, revise, or clarify its rules.

[9]The results from a test of this proposed solution will be presented in the final report.

5.0 ACCURACY AND COMPLETENESS OF PART B REFERRING UPIN REPORTING

The proliferation of new medical specialties and concomitant increase in the number of physicians specializing over the past 30 years has been accompanied by burgeoning medical care expenditures - including Medicare Part B expenditures. Congress enacted the Medicare Fee Schedule (MFS), in part, to constrain Medicare Part B expenditures. One important feature of the MFS is the reduction of fees for procedures that are now typically performed by specialists. The reduction of fees for specialty-related procedures provides less incentive to specialists to perform such procedures - at least on Medicare beneficiaries.

In related legislation, Congress also enacted Medicare Volume Performance Standards (MVPS) to help constrain Part B expenditures. The rate of increase of the MVPS is one the factors the Secretary of the Department of Health and Human Services (DHHS) considers when updating the MFS and its components, such as the national surgical conversion factor. Clinical laboratory services, services that are often referred, are currently apportioned to nonsurgical services in the growth calculations for the MVPS.

Complaints regarding MVPS spending limits (*American Medical News*, April 17, 1995) might have prompted the Secretary to consider changes in the treatment of clinical laboratory services so that they are equitably apportioned to surgical, nonsurgical, and primary care specialty groupings. One possible apportionment method is based on each specialty grouping's share of overall expenditures. A different method, which might result in different shares for each specialty grouping, could be based on the specialty grouping to which a referring/ordering physician belongs.

The feasibility of using the specialty grouping of referring/ordering physicians depends on the accuracy and completeness of Part B referring UPIN reporting. If reliable, the referring UPIN could be used to analyze the consequences of potential revisions in the MVPS. The reliability of referring UPINs, is thus, clearly of consequence to any research based on them that could affect the distribution of physician payments. Aside from public policy concerns, studies of physician practice patterns also rely on the accuracy and completeness of Part B referring UPIN reporting.

One of the reasons for the establishment of UPINs was to enforce Congressionally-mandated restrictions on physician self-referrals. It is, thus, administratively important that referring UPIN reporting is complete and accurate. Since there has not previously been a large-scale analysis of referring UPINs, this report provides basic descriptive information on referring UPIN reporting.

The results of the following analyses of referring UPINs are described in this chapter:

- the reporting rates of referring UPINs by selected characteristics such as CWF edit policy and the type of service;
- specialty and form of practice of referring physicians; and
- rates for which referring UPINs are found as performing UPINs in other claims by selected characteristics such as the type of service.

The 1993 5 percent beneficiary sample Standard Analytical File (Part B Physician Supplier claims only) and the April 4, 1994 Physician Registry file were used in all of the analyses. The October 15, 1993 Physician Registry file was also used in the analysis of the characteristics of referring physicians. Claims processed by the two Railroad Retirement Board carriers were not used in the analyses.

5.1 Reporting Requirements for UPINs of Ordering/Referring Physicians

HCFA's general instructions on reporting referring UPINs on claims are briefly reviewed in this section. Detailed instructions on CWF edit policy and for the usage of surrogate UPINs can be found in subsequent sections. All claims for Medicare-covered services provided by physicians or suppliers that were ordered or referred by a physician must have that physician's name and UPIN entered into, respectively, items 17 and 17a of the *Health Insurance Claim Form* (HCFA-1500).[1] For related circumstances, the instructions are:[2]

[1]Various sections of the *Medicare Carriers Manual* (as found on the January 1996 version of HCFA's CD-ROM containing HCFA's Laws, Regulations, and Manuals) are the sources of this section.

[2]*Ibid.*, Section 2010.1.

- Self-referral: when the ordering physician is also the performing physician (as often is the case with in-office clinical laboratory tests), the performing physician's name and assigned UPIN must appear in items 17 and 17a.

- When a patient is referred to a physician who also orders and performs a diagnostic service, a separate claim form is required for the diagnostic service.

  - Enter the original ordering/referring physician's name and UPIN in items 17 and 17a of the first claim form.

  - Enter the ordering (performing) physician's name and UPIN in items 17and 17a of the second claim form.

HCFA's instructions also provide guidance for the following special circumstances: (1) when a service is ordered/referred by a physician extender (or other limited license practitioner), the UPIN of the physician extender's supervising physician should be used in item 17a and (2) surrogate UPINs are required for those referrals in which the referring physician does not have an assigned UPIN.

5.2 Reporting Rates of Referring UPINs by Selected Characteristics

The reporting rates of referring UPINs are presented by the following characteristics: CWF edit policy, carrier, performing physician's form of practice, (e.g., solo practitioner) specialty of the performing physician/supplier, and type of service. The referring UPIN itself was classified into invalid, surrogate, and valid. The valid referring UPIN category was further subdivided into "died prior to July 1, 1992," self-referred, and all other valid. A referring UPIN was considered present in a claim if the referring UPIN field did *not* have any of the following three values: (1) all blanks, (2) all zeroes, or (3) all nines.

Surrogate UPINs were designed to be used by the referring physician and only if that physician has not yet been issued a UPIN. Surrogate UPINs contain alphabetic characters in the first three positions and zeroes in the last three positions. They are available for:

- interns and residents (INT000 or RES000);
- retired physicians referring services (RET000);
- physicians with the Military or Veteran Affairs (VAD000);
- physicians with the Public Health Service (PHS000); and

- physicians who do not have a UPIN and who do not qualify for one of the above categories (OTH000).

All of the above surrogate UPINs are temporary until a physician receives a UPIN, except for RET000. Any "surrogate" UPIN that deviated in the slightest from the above list (e.g., PHS001) was considered an invalid UPIN for the analysis. Any non-surrogate UPIN that could not be found in the Physician Registry was also considered invalid. Although not invalid *per se*, the indiscriminate usage of surrogate UPINs could undermine studies of physician referral patterns as well as hinder the possible use of referring UPINs to apportion clinical laboratory services.

The presence of referring UPINs belonging to physicians that died more than six months prior to a rendered service also casts doubt upon the integrity of the referring UPIN field on Part B claims. While it is possible that beneficiaries might have problems scheduling a service which had been referred, it is unlikely that it would take more than six months to obtain the referred service. Similarly, although a beneficiary might be receiving continuing services from the physician/provider (to whom the beneficiary was referred) it does not seem reasonable to attribute such services provided after six months to the original referring physician. It thus seems possible that referring UPINs belonging to physicians who died more than six months prior to the rendered service represent reporting errors as much as invalid UPINs do.

Self-referrals denotes cases in which the performing and referring UPIN are the same. Self-referral reporting rates are of special interest with regard to diagnostic testing since Congress mandated restrictions on referral of services to physician owners of certain ancillary service providers.

Since the referred UPIN appears but once on a claim, the natural unit of analysis is seemingly the claim. The CWF edit policy, the HCFA type of service, and the Berenson-Eggers type of service, however, are inherently line-item rather than claim-level characteristics. These three characteristics were thus analyzed at the line-item level. The specialty of the performing physician/supplier was analyzed at the claim level since less than 0.5 percent of the claims had more than one type of specialty indicated on the claim. The carrier and form of practice of the performing UPIN were also conducted at the claim level.

5.2.1 CWF Edit Policy

The purpose of the CWF edit policy is to ensure that all claims with services pertaining to consultation, diagnostic radiology, diagnostic laboratory, durable medical equipment (DME) and other specified services contain a referring UPIN. The *Medicare Carriers Manual* states:

> If any procedure codes (HCPCs) associated in your claims processing system with CWF Type of Service (TOS) codes: 3 (consultative services), 4 (diagnostic radiology), 5 (diagnostic laboratory) (field 59, position 247 of the CWF Part B record) or durable medical equipment, orthotics and prosthetics, are shown on the claim form, the name of the physician who ordered or referred the item or service must be shown in Item 17. The ordering/referring physician's assigned or surrogate UPIN is to be entered in Item 17a of the HCFA-1500 form. (Section 1009.1)

The CWF edit policy, therefore, represents a benchmark by which to assess the overall completeness and quality of referring UPIN reporting.

About 80 percent of the 45.8 million line items have a referring UPIN present (Table 5-1). Nearly half of the line items are subject to the CWF edit policy. Invalid UPINs, surrogate UPINs, and UPINs of physicians that died prior to July 1992, together, were present on 2.6 percent of all line items.

The combined rate of invalid referring UPINs, surrogate UPINs, and UPINs belonging to physicians that died prior to July 1992 is 3.5 percent for non-edited items, more than twice the 1.6 percent rate for edited items, thus indicating better quality UPIN reporting among edited items. Edited items have a lower self-referral rate (about 30 percent) than non-edited items, which is expected because, together, DME and consultations should have low self-referral rates.

Over 99.98 percent of edited line items have a referring UPIN present, as compared to 61.5 percent of non-edited line items. If the number of line items with referring UPINs is used as a comparison base instead of total line items, the combined percentage of non-edited line items with invalid UPINs, surrogate UPINs, and UPINs belonging to physicians that died before July 1992 is higher than 3.5 percent, which increases the gap between non-edited and edited line items even more so.

When self-referrals are removed from the calculation of the edited line items reporting rate, as done by Lee, Boutwell, and Merrill (1993), the overall referring UPIN reporting rate is 99.97 percent and the valid referring UPIN reporting rate is 97.1 percent. Not only are these rates

TABLE 5-1

REFERRING UPIN REPORTING BY CWF EDIT POLICY, 1993

CWF EDIT POLICY	NUMBER OF LINE ITEMS		PERCENT OF TOTAL LINE ITEMS					
				TYPE OF REFERRING UPIN				
						Referring UPIN in Registry		
	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
NON-EDITED ITEMS	23,569,445	14,500,904	61.52 %	1.89 %	1.16 %	0.49 %	35.26 %	22.72 %
EDITED ITEMS	22,270,567	22,266,288	99.98	0.32	1.19	0.10	29.94	68.43
DURABLE MEDICAL EQUIPMENT, ETC.	976,530	976,102	99.96	0.53	2.44	0.09	3.47	93.43
CONSULTATION (TOS=3)	993,962	993,771	99.98	0.49	0.99	0.12	6.54	91.85
DIAGNOSTIC RADIOLOGY (TOS=4)	4,133,783	4,133,039	99.98	0.40	2.16	0.11	14.84	82.47
DIAGNOSTIC LABORATORY (TOS=5)	16,166,292	16,163,376	99.98	0.28	0.88	0.09	36.84	61.89
TOTALS	**45,840,012**	**36,767,192**	**80.21**	**1.13**	**1.17**	**0.30**	**32.68**	**44.93**

NOTES: [1] Any set of characters other than all blanks, all zeros, or all nines.

[2] UPIN not in Registry because of invalid format, reporting/transcription problems, or any other type of error.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and Physician Registry (April 4, 1994) file.

high, they represent tremendous improvement in the reporting of referring UPINs since the CWF edit policy became effective on January 1, 1992. Using claims from the first three months of 1992, only one year earlier than the claims used in our study, Lee, *et al.* found that only 37 percent of imaging and laboratory test line items had a valid referring UPIN present. Regardless of how the referring UPIN reporting rate is calculated, it is now nearly 100 percent for items subject to the CWF edit policy - nearly perfect compliance with HCFA's policy.

In a medical care system where patients *always* initiate care through their primary care physician or a "gatekeeper," consultations would be performed to assist the referring physician in determining a course of treatment. If such a system can be considered as a benchmark, the physician self-referral rate should be equal to zero. Therefore, the 6.5 percent self-referred rate for consultation claims is a puzzle. One possible reason for the non-zero rate is that the consultant (i.e., the performing physician) does not know the referring physician's UPIN and either the performing physician or the carrier inserts the performing physician's UPIN into the referring UPIN field.

Another possible reason for a non-zero rate is that some consultations may be due to beneficiary self-referrals rather than physician self-referrals. Even though the beneficiary initiated the consultation, the performing physician is allowed to bill the visit as a consultation rather than evaluation and management if the visit can be defined as a consult. Since consultation claims require the referring UPIN, the performing physician should use his/her UPIN as the referring UPIN.[3] In such cases, a non-zero self-referral rate may be an artifact of HCFA's requirement that consultations have a referring UPIN.

5.2.2 Carriers

About 74 percent of the 24.6 million claims submitted to Medicare Part B carriers contained a referring UPIN (Table 5-2). About 1.2 percent of claims contained invalid referring UPINs, while surrogate UPINs were present on 1.1 percent of claims. The overall rate of referring UPINs belonging to physicians who died prior to July 1992 was 0.4 percent and the overall self-referral rate was 30.8 percent. Nearly 41 percent of the claims had referring UPINs belonging to other physicians.

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[3] *Ibid.*, Section 1009.1

TABLE 5-2

REFERRING UPIN REPORTING BY CARRIER, 1993

CARRIER		NUMBER OF CLAIMS		PERCENT OF TOTAL CLAIMS					
					TYPE OF REFERRING UPIN				
							Referring UPIN in Registry		
Number	Name	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
00510	Alabama BC/BS	412,274	315,893	76.62 %	0.55 %	0.94 %	0.02 %	37.51 %	37.61 %
00520	Arkansas BC/BS, AR	252,286	208,396	82.60	1.47	0.05	0.07	45.20	35.83
00528	Arkansas BC/BS, LA	386,933	295,626	76.40	1.29	0.52	0.07	35.51	39.01
00542	California BS	1,056,435	748,118	70.82	2.43	0.81	0.05	24.86	42.66
00550	Colorado BC/BS	223,067	173,640	77.84	2.15	0.50	0.02	32.96	42.21
00570	Pennsylvania BS, DE	334,126	315,268	94.36	0.19	0.86	0.06	5.64	87.60
00580	Pennsylvania BS, DC	288,530	244,374	84.70	0.51	1.37	0.07	27.12	55.62
00590	Florida BC/BS	2,064,356	1,733,638	83.98	0.57	0.15	3.83	38.82	40.61
00621	Illinois BC/BS	952,729	658,046	69.07	1.06	0.96	0.03	28.60	38.41
00630	Indiana BC/BS	474,429	343,907	72.49	3.55	0.68	0.10	31.71	36.45
00640	Iowa BS	289,816	211,212	72.88	0.26	0.37	0.02	36.77	35.45
00650	Kansas BS, KS	184,517	135,876	73.64	3.27	0.77	0.03	37.30	32.27
00655	Kansas BS, NE	146,745	113,058	77.04	0.97	0.28	0.03	40.31	35.45
00660	Kentucky BC/BS	409,721	286,195	69.85	0.88	0.50	0.02	25.96	42.49
00690	Maryland Blue Shield	313,613	245,150	78.17	0.22	1.61	0.06	31.70	44.57
00700	C&S Administrative Services, MA	675,346	448,001	66.34	1.80	1.54	0.04	21.81	41.14
00710	Michigan BC/BS	1,033,213	780,946	75.58	2.02	2.03	0.06	29.44	42.02
00720	Minnesota BC/BS	134,552	97,547	72.50	1.42	0.10	0.01	49.80	21.17
00740	Kansas BS, MO	182,441	143,213	78.50	3.08	0.93	0.07	32.40	42.02
00751	Montana BC/BS	67,643	46,449	68.67	0.15	0.19	0.04	32.01	36.28
00780	C&S Administrative Services, NH	147,637	94,237	63.83	0.99	0.35	0.03	27.73	34.74
00801	Blue Shield of Western New York	576,783	365,493	63.37	0.81	0.68	0.01	21.02	40.85
00803	Empire BC/BS, NY	1,105,567	716,315	64.79	1.67	1.61	0.02	24.61	36.88

TABLE 5-2 (continued)

REFERRING UPIN REPORTING BY CARRIER, 1993

CARRIER		NUMBER OF CLAIMS		PERCENT OF TOTAL CLAIMS					
				TYPE OF REFERRING UPIN					
							Referring UPIN in Registry		
Number	Name	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
00820	North Dakota BC/BS, ND-SD	134,300	98,909	73.65 %	0.45 %	0.62 %	0.02 %	38.17 %	34.38 %
00825	North Dakota BC/BS, WY	24,762	15,913	64.26	0.52	1.08	0.02	27.97	34.67
00860	Pennsylvania BS, NJ	951,072	757,351	79.63	0.55	1.24	0.07	28.05	49.72
00865	Pennsylvania BS, PA	1,627,175	1,241,990	76.33	0.50	2.41	0.05	29.10	44.27
00870	Rhode Island Blue Shield	125,303	90,074	71.88	0.77	0.65	0.06	31.38	39.03
00880	South Carolina BC/BS	338,456	245,985	72.68	1.90	1.23	0.06	33.05	36.44
00900	Texas BC/BS	1,311,613	970,184	73.97	1.07	0.63	0.06	31.01	41.20
00910	Utah BC/BS	90,546	63,738	70.39	0.08	1.47	0.16	33.21	35.47
00932	Washington Physician Service[3]	393,099	265,962	67.66	0.26	0.47	0.02	31.17	35.74
00951	Wisconsin Physician Service	464,893	364,566	78.42	0.17	0.71	0.17	43.15	34.22
00973	S.S.S., PR	245,215	135,373	55.21	0.57	4.70	0.04	13.77	36.12
00974	S.S.S., VI	612	327	53.43	23.69	11.27	0.00	6.21	12.25
01020	Aetna Life and Casualty, AK	11,982	8,703	72.63	0.38	1.15	0.16	41.45	29.50
01030	Aetna Life and Casualty, AZ	335,789	255,310	76.03	0.24	0.84	0.36	33.21	41.38
01040	Aetna Life and Casualty, GA	574,443	433,728	75.50	0.33	1.51	0.43	33.57	39.66
01120	Aetna Life and Casualty, HI	69,837	32,970	47.21	0.03	0.10	0.09	13.17	33.82
01290	Aetna Life and Casualty, NV	101 017	78,837	78.04	0.10	0.60	0.26	30.79	46.29
01360	Aetna Life and Casualty, NM	91,437	56,118	61.37	0.29	0.92	0.24	26.11	33.82
01370	Aetna Life and Casualty, OK	274,120	199,007	72.60	0.09	0.36	0.17	36.59	35.38
01380	Aetna Life and Casualty, OR	214,729	142,547	66.38	0.19	0.69	0.16	30.32	35.02
02050	Transamerica Occidental	1,017,829	845,820	83.10	4.57	2.00	0.10	35.86	40.58
05130	Connecticut General Insurance, ID	73,853	50,883	68.90	1.59	0.71	0.00	36.67	29.93
05440	Connecticut General Insurance, TN	503,961	376,701	74.75	1.14	0.60	0.03	34.41	38.57
05535	Connecticut General Insurance, NC	807,590	649,174	80.38	0.86	1.79	0.04	29.12	48.57

TABLE 5-2 (continued)

REFERRING UPIN REPORTING BY CARRIER, 1993

CARRIER		NUMBER OF CLAIMS		PERCENT OF TOTAL CLAIMS					
				TYPE OF REFERRING UPIN					
							Referring UPIN in Registry		
Number	Name	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
10230	Travelers Insurance Co., CT	370,515	256,949	69.35	0.95 %	0.95 %	0.04 %	23.48 %	43.92 %
10240	Travelers Insurance Co., MN	162,160	104,093	64.19	0.45	0.78	0.01	21.30	41.65
10250	Travelers Insurance Co., MS	232,350	158,398	68.17	0.20	1.83	0.03	34.27	31.84
10490	Travelers Insurance Co., VA	443,073	320,671	72.37	0.25	1.23	0.01	38.14	32.75
11260	Missouri General Am. , MO	392,607	256,597	65.36	0.21	1.10	0.06	27.64	36.35
14330	Group Health Insurance, NY	140,478	92,636	65.94	0.98	1.29	0.12	25.68	37.87
16360	Nationwide Insurance Co., OH	1,081,962	788,418	72.87	0.96	0.87	0.02	31.56	39.46
16510	Nationwide Insurance Co., WV	167,588	125,144	74.67	2.10	0.80	0.00	47.80	49.30
21200	C&S Administrative Services, ME	122,855	86,812	70.66	1.40	0.90	0.00	46.30	51.30
TOTALS		**24,609,980**	**18,290,486**	**74.32**	**1.16**	**1.11**	**0.38**	**30.79**	**40.88**

NOTES: [1] Any set of characters other than all blanks, all zeros, or all nines.

[2] UPIN not in Registry because of invalid format, reporting/transcription problems, or any other type of error.

[3] The carrier for the State of Washington changed on January 1, 1994.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and Physician Registry (April 4, 1994) file.

Eight of the carriers processed over one million claims, while eight processed fewer than 100,000 claims. Florida BC/BS processed the largest volume of claims, nearly 8.5 percent of the total claims. Aetna (Hawaii) had the lowest referring UPIN reporting rate (47 percent), while Pennsylvania BS (Delaware)[4] had the highest referring UPIN reporting rate (nearly 95 percent). This is mostly due to the high volume of out-of-state laboratory claims submitted to the Delaware carrier by Smith-Kline Laboratories.

Aside from territorial carriers, Transamerica Occidental (southern California) had the highest rate of invalid referring UPINs, 4.57 percent, while Aetna (Hawaii) had the lowest rate at 0.03 percent.[5] The reporting of invalid referring UPINs may be due to inadequate screening of claims.[6] For example, some claims were found to contain characters (e.g., a question mark) that should not appear in the UPIN field.

The usage of surrogate UPINs ranged from 0.05 percent (Arkansas BC/BS) to 2.41 percent (Pennsylvania BS (Pennsylvania)). The use of surrogate UPINs by some carriers is probably mostly due to waiting until after a claim has been processed, before attempting to create a new record in their provider file for recently-established physicians.

Four carriers did not have any referring UPINs belonging to a physician who died prior to July 1992, while claims from Florida BC/BS had the highest rate of physicians who died prior to July 1992, at 3.83 percent. Pennsylvania BS (Delaware) had the lowest rate of self-referred claims at 5.64 percent, while Minnesota BC/BS had the highest self-referral rate of nearly 50 percent. It should be noted that Minnesota BC/BS is no longer the Medicare Part B carrier for the "rural" areas of Minnesota.

Among multi-state carriers, Aetna Insurance Co. experienced self-referral rates that ranged from 13 percent (Hawaii) to nearly 42 percent (Alaska). Other multi-state carriers such as Travelers Insurance Co. had less of a disparity in self-referred rates. Aetna Insurance Co. had a 0.21 percent rate of invalid referring UPINs, while Kansas BS, which services Kansas, Missouri, and Nebraska, had the highest percentage at 2.4 percent. Travelers Insurance (Mississippi) had

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[4]A subsidiary of Pennsylvania Blue Shield, Xact Medicare Services, is the carrier for Pennsylvania, New Jersey, Delaware, and the District of Columbia.

[5]S.S.S. (Puerto Rico) and S.S.S. (Virgin Islands) have the highest invalid referring UPINs and surrogate UPIN rates.

[6]In theory, only claims not subject to the CWF edit could include invalid characters, because the edit rejects claims containing UPIN format errors.

the highest rate of surrogate UPINs (1.83 percent), while Aetna Insurance Co. (Hawaii) had the lowest rate (0.1 percent).

The overall referring rate from other physicians (i.e., not self-referred) was nearly 41 percent. Pennsylvania BS, the Medicare Part B carrier for Delaware and the District of Columbia, was the only carrier with more than a 50 percent rate of referrals from other physicians. Further, Pennsylvania BS (Delaware, the District of Columbia, and New Jersey) had the three highest referral rates from other physicians. Minnesota BC/BS, which had the highest rate of self-referrals, had the lowest rate of referrals from other physicians at nearly 22 percent.

There is considerable disparity among carriers within each of the different reporting categories. For instance, while the overall reporting rate is 75 percent, the overall 47 percent rate for Aetna (Hawaii) is half that of Pennsylvania BS's (Delaware) 95 percent rate. Among the factors that might influence the variation in referring UPIN reporting rates are specialty mix in the carrier service area, out-of-state laboratory claims, laboratory tests performed out of state, and carrier enforcement/compliance of HCFA reporting requirements.

5.2.3 Performing UPIN's Form of Practice

The analysis of the referring UPIN in association with the performing UPIN's form of practice was conducted at the claims level (Table 5-3). If an exact match of the performing UPIN/PIN from the claim to the Registry could not be found, then the group practice indicator was "imputed" from the active practice setting most recently added to the Registry was used. If the practice setting used for determining the form of practice had a group practice indicator with a value equal to 2, 3, or 5, the form of practice was considered invalid. Since not all claims have a performing UPIN, either because the service was provided by a supplier or because the UPIN was invalid, separate imputed categories were created for these circumstances.

Nearly 80 percent of claims had a performing UPIN found in the Registry. Performing UPINs belonging to solo practitioners represented about 43 percent of claims, while group practitioners represented about 37 percent of claims. Invalid codes for the form of practice were associated with about 0.4 percent of claims. Nearly 20 percent of claims did not have a UPIN that could be found in the Registry. Of these 4.9 million claims, 4.3 million had a blank value for the performing UPIN, which may be indicative of a supplier. However, 316,924 of these claims had a physician specialty. Of the 608,413 claims in which the non-blank "UPIN" could not be found in

TABLE 5-3

REFERRING UPIN REPORTING BY PERFORMING UPINS FORM OF PRACTICE, 1993

	NUMBER OF CLAIMS		PERCENT OF TOTAL CLAIMS					
			TYPE OF REFERRING UPIN					
						Referring UPIN in Registry		
Performing UPIN Status	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
Performing UPIN found in Registry	19,615,941	13,798,045	70.34 %	1.00 %	0.70 %	0.46 %	38.43 %	29.72 %
Solo Practitioner	10,570,457	6,914,281	65.41	0.97	0.55	0.54	39.81	23.53
UPIN/PIN exactly matched	7,682,008	4,896,371	63.74	0.98	0.37	0.72	41.46	20.21
UPIN/PIN imputed	2,888,449	2,017,910	69.86	0.95	1.03	0.07	35.43	32.39
Group Practitioner	9,045,484	6,883,764	76.10	1.02	0.87	0.36	36.76	37.09
UPIN/PIN exactly matched	6,352,422	4,851,676	76.38	1.05	0.75	0.48	38.01	36.08
UPIN/PIN imputed	2,693,062	2,032,088	75.46	0.96	1.16	0.06	33.80	39.48
Invalid form of practice	101,531	62,714	61.77	1.17	0.68	0.06	42.94	16.92
Performing UPIN blank or not found in Registry	4,892,509	4,429,728	90.54	1.82	2.76	0.09	0.00	85.87
UPIN blank	4,284,096	3,918,107	91.46	1.68	2.76	0.09	0.00	86.92
Physician Specialty on claim	316,924	224,578	70.86	1.16	1.62	0.03	0.00	68.05
Non-physician Specialty on claim	3,967,172	3,693,529	93.10	1.72	2.85	0.10	0.00	88.43
UPIN not found in Registry	608,413	511,621	84.09	2.76	2.78	0.09	0.00	78.46
Physician Specialty on claim	128,669	83,519	64.91	3.65	4.10	0.22	0.00	56.94
Non-physician Specialty on claim	479,744	428,102	89.24	2.52	2.42	0.06	0.00	84.23
TOTALS	**24,609,981**	**18,290,487**	**74.32**	**1.16**	**1.11**	**0.38**	**30.79**	**40.88**

NOTES: [1] Any set of characters other than all blanks, all zeros, or all nines.

[2] UPIN not in Registry because of invalid format, reporting/transcription problems, or any other type of error.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and Physician Registry (April 4, 1994) file.

the Registry, 128,669 had a physician specialty. Together, more than 1.8 percent of all claims had a physician specialty but did not have a valid performing UPIN.

About 65 percent of the claims for performing solo practitioners had a referring UPIN on it while about 76 percent of the claims for performing physicians in group practices had a referring UPIN on it. Most of the difference can be accounted for by the difference in the percentage of claims with other referring physicians. About 23.5 percent of the referrals of performing solo practitioners came from other physicians, while 37.1 percent of the referrals of performing group practitioners came from other physicians.

The incidence of invalid referring UPINs and surrogate UPINs on the claims without valid performing UPINs was 4.6 percent, much higher than the 1.7 percent on claims with valid performing UPINs. For claims without valid performing UPINs, since by definition performing UPINs were not on the claims, the self-referral rate is equal to zero. The referral rate from other physicians when the performing UPIN was found was 30 percent, while the referral rate from other physicians when the performing UPIN was not found was 86 percent. Supplier claims probably account for most of the claims with blank performing UPINs and UPINs not found in the Registry. Supplier claims also are more likely have a higher share of claims subject to the CWF edit policy (e.g., laboratory services) than do physician claims. The difference between 30 percent and 86 percent of claims referred by "other" physicians, therefore, is probably due to a higher share of supplier claims subject to the CWF edit policy among the blank performing UPINs, *et cetera*.

5.2.4 Referring UPIN Reporting by Specialty of the Performing Physician/Supplier

The analysis of referring UPIN reporting by the specialty of the performing physician or supplier was performed at the claims level since less than a half of a percent of all claims had more than one specialty listed. Of the 24.5 million claims, 18.3 million, or 74.3 percent, had a referring UPIN present (Table 5-4). Suppliers (e.g., independent billing clinical laboratories) and physician specialties that would be expected to have the highest referring rates (e.g., pathologists) did, indeed, have the highest reporting rates of referring UPINs. There were 21 specialties that had reporting rates in excess of 90 percent and another 13 specialties between 80 and 90 percent. There were 16 specialties, out of the 91 listed in Table 5-4, that had reporting rates less than 50

TABLE 5-4

REFERRING UPIN REPORTING BY THE SPECIALTY OF THE PERFORMING PROVIDER, 1993

SPECIALTY		NUMBER OF CLAIMS		PERCENT OF TOTAL CLAIMS					
					TYPE OF REFERRING UPIN				
							Referring UPIN in Registry		
Code	Name	Total	Referring UPIIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
01	General Practice	1,015,586	621,948	61.24 %	1.11 %	0.50 %	0.75 %	51.21 %	7.68 %
02	General Surgery	497,331	321,094	64.56	1.13	0.42	0.41	21.14	41.47
03	Allergy/Immunology	77,364	44,828	57.94	1.62	0.19	0.95	42.16	13.02
04	Otolaryngology	255,544	155,575	60.88	1.22	0.48	0.90	33.47	24.81
05	Anesthesiology	327,273	219,123	66.95	3.51	1.06	0.41	3.76	58.22
06	Cardiology	1,104,585	963,967	87.27	0.70	0.50	0.37	44.46	41.24
07	Dermatology	420,968	183,787	43.66	1.28	0.37	1.59	28.23	12.19
08	Family Practice	2,504,644	1,682,663	67.18	0.81	0.15	0.33	61.40	4.48
09	Gynecology (Osteo)	28	17	60.71	0.00	0.00	0.00	14.29	46.43
10	Gastroenterology	319,531	240,024	75.12	1.09	0.45	0.54	26.68	46.36
11	Internal Medicine	3,734,603	2,592,752	69.43	0.79	0.27	0.34	57.88	10.14
12	Osteo. Manipulative Therapy	17,850	9,043	50.66	1.43	0.49	0.11	43.94	4.68
13	Neurology	242,111	198,773	82.10	0.99	0.89	0.41	13.58	66.23
14	Neurosurgery	43,947	33,043	75.19	1.59	0.80	0.36	10.43	62.02
15	Obstetrics (Osteo)	34	13	38.24	8.82	0.00	0.00	8.82	20.59
16	Obstetrics/Gynecology	162,469	94,313	58.05	1.00	0.23	0.57	43.54	12.70
17	Ear, Nose, Throat (Osteo)	86	23	26.74	1.16	0.00	0.00	23.26	2.33
18	Ophthalmology	1,168,066	498,454	42.67	1.46	0.48	1.21	27.15	12.38
19	Oral Surgery (Dentists only)	6,325	4,063	64.24	2.72	11.89	0.44	19.98	29.20
20	Orthopedic Surgery	496,357	392,212	79.02	1.21	0.78	0.40	51.44	25.19
21	Path. Anat., Clinical Pathology (Osteo)	27	27	100.00	0.00	0.00	0.00	0.00	100.00
22	Pathology	358,634	356,129	99.30	0.33	1.72	0.14	1.55	95.57
23	Peripheral Vascular Disease (Osteo)	586	504	86.01	18.60	0.00	0.34	10.24	56.83
24	Plastic and Reconstructive Surgery	39,757	22,489	56.57	1.93	0.47	0.78	11.57	41.81
25	Physical Medicine and Rehabilitation	103,654	79,436	76.64	1.70	0.76	0.27	18.02	55.87
26	Psychiatry	341,585	111,570	32.66	2.37	0.63	0.84	11.97	16.85
27	Psychiatry, Neurology (Osteo)	180	39	21.67	0.00	0.00	0.00	1.11	20.56

TABLE 5-4 (continued)

REFERRING UPIN REPORTING BY THE SPECIALTY OF THE PERFORMING PROVIDER, 1993

SPECIALTY		NUMBER OF CLAIMS		PERCENT OF TOTAL CLAIMS					
					TYPE OF REFERRING UPIN				
							Referring UPIN in Registry		
Code	Name	Total	Referring UPIIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
28	Colorectal Surgery	20,100	13,727	68.29 %	2.14 %	0.40 %	0.83 %	23.61 %	41.31 %
29	Pulmonary Disease	318,194	252,486	79.35	1.30	0.44	0.46	39.07	38.07
30	Diagnostic Radiology	2,180,655	2,174,476	99.72	0.46	2.71	0.13	0.81	95.60
31	Roentgenology,Radiology (Osteo)	419	419	100.00	0.95	0.24	0.00	1.43	97.37
33	Thoracic Surgery	66,352	54,779	82.56	1.18	0.44	0.27	15.15	65.52
34	Urology	580,506	500,938	86.29	0.70	0.34	0.26	55.32	29.67
35	Chiropractic	300,281	48,956	16.30	2.05	0.64	0.08	12.68	0.84
36	Nuclear Medicine	22,855	22,161	96.96	0.64	2.24	0.13	4.91	89.04
37	Pediatric Medicine	26,674	14,476	54.27	1.44	0.55	1.02	40.86	10.39
38	Geriatric Medicine	58,402	33,296	57.01	1.12	0.31	0.74	49.93	4.92
39	Nephrology	208,707	127,935	61.30	1.21	0.49	0.35	34.46	24.80
40	Hand Surgery	8,945	5,482	61.29	1.26	0.23	0.29	33.15	26.35
41	Optometry	217,289	83,955	38.64	1.20	0.82	0.96	23.35	12.31
42	Certified Nurse Midwife	21	4	19.05	0.00	9.52	0.00	4.76	4.76
43	CRNA, Anesthesia Asst.	88,741	60,502	68.18	3.04	0.43	0.03	0.39	64.28
44	Infectious Disease	60,829	47 35	77.82	0.73	0.50	0.28	29.15	47.16
45	Mammography Screening Center	2,866	2,686	93.72	1.22	2.06	0.24	3.00	87.19
46	Endocrinology	106,052	83,092	78.35	0.61	0.33	0.50	57.71	19.19
48	Podiatry	736,406	389,411	52.88	1.29	0.37	0.58	26.23	24.41
49	Ambulatory Surgical Center	54,484	31,865	58.49	2.66	0.59	0.01	5.28	49.94
50	Nurse Practitioner	5,555	3,367	60.61	16.40	1.80	0.00	0.04	42.38
51	Med Supply Co. with Cert. Orthotist	11,696	11,566	98.89	0.56	2.98	0.09	0.35	94.90
52	Med Supply Co. with Cert. Prosthetist	3,135	3,091	98.60	0.67	0.99	0.41	0.00	96.52
53	Med Supply Co.with Cert.Orthotist-Prosth	17,964	17,724	98.66	0.76	2.98	0.12	0.11	94.69
54	Med Supply Co. not included in 51-53	588,239	562,604	95.64	1.10	2.50	0.10	0.17	91.77
55	Individual Cert. Orthotist	361	360	99.72	0.00	0.55	0.00	0.55	98.61
56	Individual Cert. Prosthetist	102	99	97.06	0.00	0.00	0.00	0.00	97.06

TABLE 5-4 (continued)

REFERRING UPIN REPORTING BY THE SPECIALTY OF THE PERFORMING PROVIDER, 1993

SPECIALTY		NUMBER OF CLAIMS		PERCENT OF TOTAL CLAIMS					
				TYPE OF REFERRING UPIN					
							Referring UPIN in Registry		
Code	Name	Total	Referring UPIIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
57	Individual Cert. Orthotist-Prosthetist	174	171	98.28 %	0.00 %	5.17 %	0.00 %	0.00 %	93.10 %
58	Individuals not included in 55-57	16,831	16,511	98.10	1.19	3.17	0.08	0.37	93.28
59	Ambulance Service Supplier	338,620	196,034	57.89	15.80	17.80	0.03	0.07	24.19
60	Public Health or Welfare Agencies	24,370	1,347	5.53	0.24	1.95	0.01	1.29	2.04
62	Ind.-Billing Psychologist	545	241	44.22	0.73	2.39	0.00	1.10	40.00
63	Portable X-Ray Supplier	75,813	75,222	99.22	0.34	0.77	0.06	0.06	98.00
64	Ind.-Billing Audiologist	7,644	7,404	96.86	1.60	3.43	0.09	0.07	91.68
65	Ind.-Billing Physical Therapist	64,368	55,277	85.88	2.43	0.63	0.05	0.11	82.66
66	Rheumatology	176,591	132,767	75.18	0.60	0.25	0.60	57.25	16.49
67	Ind.-Practicing Occupational Therapist	2,087	1,740	83.37	2.25	0.77	0.00	0.38	79.97
68	Clinical Psychologist	47,042	18,950	40.28	5.07	5.85	0.01	1.44	27.91
69	Ind.-Billing Clinical Laboratory	2,830,954	2,830,439	99.98	0.31	1.33	0.11	0.43	97.80
70	Clinic/Other Grp Practice, except GPPP	680,297	465,605	68.44	1.01	1.41	0.02	35.44	30.56
75	Other Medical Care, GPPP	422	346	81.99	0.00	0.24	0.00	5.92	75.83
72	Peripheral Vascular Disease	6,171	5,298	85.85	1.09	0.36	0.29	33.06	51.06
77	Vascular Surgery	41,194	34,044	82.64	0.95	0.60	0.25	16.57	64.27
78	Cardiac Surgery	13,054	11,191	85.73	1.75	0.26	0.18	10.00	73.54
79	Addiction Medicine	2,026	1,142	56.37	0.15	0.00	1.18	46.50	8.54
80	Licensed Clinical Social Worker	26,917	6,317	23.47	6.42	1.10	0.02	1.42	14.51
81	Critical Care (Intensivists)	15,044	10,938	72.71	1.31	0.72	0.94	31.21	38.53
82	Hematology	16,013	12,432	77.64	0.64	4.25	0.00	49.00	23.75
83	Hematology/Oncology	308,120	258,421	83.87	0.75	0.18	0.37	49.44	33.13
84	Preventive Medicine	2,201	1,023	46.48	5.41	0.14	0.00	26.85	14.08
85	Maxillofacial Surgery	2,163	1,334	61.67	1.62	8.92	0.55	19.46	31.11
86	Neuropsychiatry	4,059	2,061	50.78	1.11	1.01	0.27	12.84	35.55
87	All Other Suppliers	388,090	361,957	93.27	0.57	1.52	0.08	0.07	91.03
88	Unknown Supplier/Provider Specialty	39,473	32,945	83.46	0.66	1.75	0.04	26.25	54.76

TABLE 5-4 (continued)

REFERRING UPIN REPORTING BY THE SPECIALTY OF THE PERFORMING PROVIDER, 1993

SPECIALTY		NUMBER OF CLAIMS		PERCENT OF TOTAL CLAIMS					
					TYPE OF REFERRING UPIN				
							Referring UPIN in Registry		
Code	Name	Total	Referring UPIIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
89	Unassigned	135	93	68.89 %	4.44 %	0.00 %	0.00 %	0.00 %	64.44 %
90	Medical Oncology	84,537	67,018	79.28	0.48	0.44	0.37	46.92	31.07
91	Surgical Oncology	6,353	4,124	64.91	3.57	0.36	0.22	26.65	34.11
92	Radiation Oncology	64,679	59,654	92.23	0.79	0.89	0.33	7.80	82.41
93	Emergency Medicine	313,556	167,705	53.48	2.22	1.14	0.60	37.02	12.50
94	Interventional Radiology	15,993	15,915	99.51	0.53	1.69	0.01	3.41	93.87
95	Ind. Physiological Lab.	53,581	53,546	99.93	0.42	1.48	0.08	0.08	97.87
97	Physician Assistant	11,077	6,766	61.08	4.09	0.63	0.00	0.14	56.22
98	Unassigned	1	0	0.00	0.00	0.00	0.00	0.00	0.00
99	Unknown Physician Specialty	4,830	1,807	37.41	0.39	0.85	0.00	3.52	32.65
TOTALS		**24,609,980**	**18,290,486**	**74.32**	**1.16**	**1.11**	**0.38**	**30.79**	**40.88**

NOTES: [1] Any set of characters other than all blanks, all zeros, or all nines.

[2] UPIN not in Registry because of Invalid format, reporting/transcription problems, or any other type of error.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and Physician Registry (April 4, 1994) file.

percent.[7] Among the specialties that had the lowest referring UPIN reporting rates were chiropractors, certified nurse midwives, licensed clinical social workers, and psychiatry.

Invalid UPINs, surrogate UPINs, and UPINs of physicians that died prior to July 1992, together, were present on about 2.6 percent of all claims. Overall, nearly 1.2 percent of the claims had invalid referring UPINs. Among the specialties with more than 50,000 claims,[8] the ambulance service supplier specialty had the highest rate of invalid referring UPINs at 15.8 percent. This was followed by anesthesiology and CRNA (anesthesia assistant) with 3.5 and 3 percent, respectively. While the high rates of invalid UPINs might be due to inexperienced hospital personnel reporting in behalf of the anesthesiologists and CRNAs, it is not clear why the rate is so high for ambulance services. Among the possible reasons that ambulance claims have so many invalid UPINs are (1) ambulance companies mistakenly believe that a referring UPIN must be present on the claim and they insert a randomly selected UPIN when they do not have one available and (2) ambulance personnel responsible for completing the claim are inadvertently using the referring UPIN field to represent something else. Several specialties had low rates (less than half of a percent) of invalid referring UPIN reporting, including pathology, diagnostic radiology, portable X-ray suppliers, independent billing clinical laboratories, medical oncology, and independent physiological laboratories.

Surrogate UPINs were reported on 1.1 percent of the claims. Perhaps not surprisingly, ambulance services also had the highest use rate of surrogate UPINs at 17.8 percent with diagnostic radiology a distant second at 2.7 percent. Several specialties had surrogate UPIN reporting rates less than 0.5 percent, including general surgery, allergy, otolaryngology, dermatology, family practice, and internal medicine.

The reporting rate of referring UPINs belonging to physicians that died prior to July 1992 was nearly 0.4 percent. Several specialties had reporting rates that exceeded twice the mean, these include allergy, otolaryngology, dermatology, ophthalmology, and optometry. With the possible exception of otolaryngology, these specialists often provide continuous care over a long span of time. If these referrals were actually made by physicians who died prior to July 1992, then such referrals must have been made at least six months prior to the referred services actually

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[7]Two of the "specialty" codes present in Table 5-4, 89 and 98, were, and still are, unassigned.

[8]In this and the following section, only those categories with more than 50,000 claims are considered in the analysis of referring UPIN reporting. (50,000 is a convenient gap in the data.)

being provided. If such is the case, then this indicates that specialists continue to report a referring UPIN well after treatment commences. This then raises the question about the meaningfulness of requiring the reporting of the referring UPIN beyond the first patient contact with the physician to whom the referral was made. Consider, for instance, a patient with heel warts. The patient first sees an internist who immediately refers the patient to a dermatologist. The treatment for heel warts can last several months, if not years. Is it still meaningful to have a referring UPIN on the claim for the seventh visit that took place eleven months after the patient contacted the internist? If not, HCFA may want to review its policy on referring UPINs if this usage does not serve HCFA's or other research needs.

The overall rate of self-referrals by physicians was 30.8 percent. The highest rates, all exceeding 57 percent, were for family practice, internal medicine, endocrinology, and rheumatology. The lowest rates, all less than five percent, included anesthesiology, pathology, diagnostic radiology, CRNA, ambulatory surgical centers (ASCs), medical supplies, ambulance services, portable X-ray suppliers, and independent billing clinical laboratories. The foregoing list includes specialties which may be expected should have low self-referral rates (e.g., anesthesiology). The fact that the rates are not zero may be indicative of follow-up diagnostic services which require a second claim with the ordering (performing) physician's UPIN entered into Item 17a.[9] The foregoing list also includes specialties that do not have UPINs associated with them (as of April 1994); these include the CRNAs, ASCs, and the suppliers. Since the UPINs associated with these self-referrals were found in the Registry, either the specialty was mis-coded or an incorrect PIN was used – a PIN which cross walked to a valid UPIN.[10]

The overall referring rate from other physicians was 41.9 percent. About a fourth of the specialties had rates greater than 80 percent. Given the nature of these specialties (e.g., suppliers, pathology, and diagnostic radiology), it is not surprising that they have the highest rates of referrals from other physicians. With one exception, radiation oncology at 7.8 percent, all of these services have self-referral rates less than five percent. Many of the specialties with the lowest rate of referrals from other physicians have higher than average self-referral rates.

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[9]See Section 5.1 of this chapter.

[10]Some carriers do not verify the accuracy of the performing PIN, but rather only check for its presence. See the discussion in Section 4.4 in Chapter 4.

5.2.5 Referring UPIN Reporting by HCFA Type of Service

The analysis of referring UPIN reporting by the HCFA type of service was performed at the line-item level. Of the 45.8 million line items, 36.8 million, or 80.2 percent, had a referring UPIN present (Table 5-5). The overall reporting rate of referring UPINs was 100 percent or nearly 100 percent for six types of service: purchase of DME (installment basis), diagnostic radiology, diagnostic laboratory, consultation, rental of DME, and used DME. Since these services are subject to the CWF edit policy (discussed in section 5.1.1), it is not surprising that these rates are so high. The lowest overall reporting rates of referring UPINs were for immunosuppressive drugs and psychological therapy – both less than 30 percent. The type of service with the most line items, medical care, had an overall referring UPIN reporting rate of 60 percent.

Invalid UPINs, surrogate UPINs, and UPINs of physicians that died prior to July 1992, together, were present on about 2.6 percent of all line items. Overall, about 1.1 percent of the claims had invalid referring UPINs. Other medical services had the highest rate of invalid referring UPINs at 12.7 percent. This high rate is due to the inclusion of ambulance services with other medical services – see the discussion of the ambulance service specialty in the previous section. (Starting in April 1995, ambulance services had were given a separate type of service code.) Diagnostic laboratory and diagnostic radiology had the lowest invalid referring UPIN reporting rates. This is not surprising given that these two services are subject to the CWF edit policy and that the claims coders for these providers are probably very knowledgeable about HCFA's rules which require referring UPINs for these services.

Surrogate UPINs were reported on 1.2 percent of the line items. As with invalid UPINs, other medical services had the highest rate of surrogate UPIN usage at 13 percent and is undoubtedly due to the ambulance services claims. Medical care and surgery had the lowest surrogate UPIN reporting rates with both less than or equal to half of a percent.

The reporting rate of referring UPINs belonging to physicians that died prior to July 1992 was 0.3 percent. Only surgery, at 0.7 percent, had a reporting rate that was more than twice the mean. Several types of service had reporting rates less than 0.1 percent, including diagnostic laboratory at 0.09 percent – there were over 16 million line items for diagnostic laboratory, which made it the second largest type of service category in Table 5-5.

TABLE 5-5

REFERRING UPIN REPORTING BY HCFA TYPE OF SERVICE, 1993

HCFA TYPE OF SERVICE		NUMBER OF LINE ITEMS		PERCENT OF TOTAL CLAIMS					
				TYPE OF REFERRING UPIN					
							Referring UPIN In Registry		
ode	Name	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
0	WHOLE BLOOD OR PACKED RED CELLS	61	58	95.08 %	0.00 %	0.00 %	0.00 %	45.90 %	49.18 %
1	MEDICAL CARE	16,410,742	9,843,069	59.98	1.25	0.40	0.54	40.88	16.90
2	SURGERY	2,880,231	1,772,569	61.54	1.23	0.51	0.71	30.73	28.36
3	CONSULTATION	993,962	993,771	99.98	0.49	0.99	0.12	6.54	91.85
4	DIAGNOSTIC RADIOLOGY	4,133,783	4,133,039	99.98	0.40	2.16	0.11	14.84	82.47
5	DIAGNOSTIC LABORATORY	16,166,292	16,163,376	99.98	0.28	0.88	0.09	36.84	61.89
6	THERAPEUTIC RADIOLOGY	296,920	277,980	93.62	0.77	0.98	0.24	7.45	84.17
7	ANESTHESIA	404,901	270,823	66.89	3.29	0.88	0.32	1.68	60.72
8	ASSISTANCE AT SURGERY	63,536	46,527	73.23	1.93	0.29	0.29	8.32	62.39
9	OTHER MEDICAL SERVICES	1,199,170	827,674	69.02	12.74	13.03	0.05	3.25	39.96
A	USED DME,PROSTHETICS,ORTHOTICS	1,331	1,328	99.77	0.90	2.93	0.00	1.50	94.44
B	HIGH RISK MAMMOGRAPHY	4,073	3,932	96.54	0.74	1.06	0.15	7.32	87.28
C	LOW RISK MAMMOGRAPHY	50,693	49,340	97.33	0.76	1.81	0.11	6.51	88.14
F	AMBULATORY SURGICA . SERVICES	53,517	31,268	58.43	2.91	0.58	0.01	2.36	52.56
G	IMMUNOSUPPRESSIVE DRUGS	6,075	1,504	24.76	1.20	0.46	0.00	16.05	7.05
I	PURCHASE OF DME(INSTALLMENT BASIS)	2	2	100.00	0.00	0.00	0.00	0.00	100.00
L	RENAL SUPPLIER IN THE HOME	12,378	11,059	89.34	2.71	1.53	0.03	2.47	82.59
M	MONTHLY CAPITATION PAYMENT(DIALYSIS)	25,381	11,792	46.46	1.98	0.85	0.32	27.37	15.94
N	KIDNEY DONOR	121	51	42.15	0.00	0.00	0.00	12.40	29.75
P	LUMPSUM PURCH.OF DME,PROSTHETICS,ORTHOT.	684,146	585,198	85.54	1.04	2.93	0.12	2.79	78.67
R	RENTAL OF DME	763,207	762,332	99.89	0.48	2.60	0.09	0.16	96.55
T	PSYCHOLOGICAL THERAPY	474,243	137,594	29.01	3.52	1.64	0.48	12.18	11.21
U	OCCUPATIONAL THERAPY	3,681	2,928	79.54	4.86	0.19	0.00	0.35	74.14
V	PNEUMOCOCCAL VACCINE	970,387	633,301	65.26	0.62	0.18	0.02	60.29	4.14
W	PHYSICAL THERAPY	239,498	205,394	85.76	2.08	0.72	0.04	0.13	82.80
Y	SECOND OPINION ON ELECTIVE SURGERY	1,674	1,278	76.34	0.90	3.70	0.06	19.47	52.21
Z	THIRD OPINION ON ELECTIVE SURGERY	7	5	71.43	0.00	0.00	0.00	14.29	57.14
TOTALS		45,840,012	36,767,192	80.21	1.13	1.17	0.30	32.68	44.93

NOTES: [1] Any set of characters other than all blanks, all zeros, or all nines.

[2] UPIN not in Registry because of invalid format, reporting/transcription problems, or any other type of error.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and Physician Registry (April 4, 1994) file.

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The overall rate of self-referrals by physicians was 32.7 percent. Four types of service had rates above the mean: pneumococcal vaccine at 60.3 percent, whole blood at 45.9 percent, medical care at 40.9 percent, and diagnostic laboratory at 36.8 percent. The rate for diagnostic laboratory reflects the large amount of testing performed in physicians' offices. Over half of the types of services had self-referral rates less than ten percent. For many of these services, such as anesthesia, it would be expected that the rates should be low. As noted in Section 5.1.1, even though relatively low at 6.5 percent, the self-referral rate for consultations may be a reflection of beneficiary self-referral rather than physician self-referral.

The overall referring rate from other physicians was 44.9 percent. Over a third of the HCFA types of service had rates greater than 80 percent. Given the nature of these services (e.g., consultation and diagnostic radiology), it is not surprising that they have the highest rates of referral from other physicians. With one exception, diagnostic radiology at 14.8 percent, all of these services have self-referral rates less than ten percent. The service with the lowest rate of referrals from other physicians was pneumococcal vaccine, the service that had the highest rate of self-referrals.

5.2.6 Referring UPIN Reporting by the Berenson-Eggers Type of Service

The analysis of referring UPIN by Berenson-Eggers type of service codes was performed at the line-item level (Table 5-6). Of the 45.8 million line items, the referring UPIN was present in 36.8 million line items, or 80.2 percent. Self-referred services were present in 33 percent of all line items. Invalid referring UPINs and surrogate UPINs were used about the same (1.13 and 1.17 respectively).

Referring UPINs were present on nearly 16 percent of chiropractic services, the lowest percentage of referring UPINs present. Other non-Medicare fee schedule line items had the highest percentage of referring UPINs present at 99.99 percent. The referring UPIN was present on 99.97% of all line items pertaining to laboratory services. Since laboratory services like diagnostic radiology and consultations are the types of services subject to the CWF edit policy, it is not surprising that the total referral rates for each of these three major categories are nearly 100 percent. Within each these three major categories, there is little variation by the sub-categories (e.g., Lab Tests - Glucose). Some of the other major categories such as major procedures have lower overall total referral rates and more variation among the sub-categories than is the case for

TABLE 5-6

REFERRING UPIN REPORTING BY BERENSON-EGGERS TYPE OF SERVICE, 1993

		NUMBER OF LINE ITEMS	PERCENT OF TOTAL LINE ITEMS					
			TYPE OF REFERRING UPIN			Referring UPIN in Registry		
Code	Berenson-Eggers Type of Service	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
D1A	Medical/Surgical Supplies	523,334	490,049	93.64 %	2.41 %	1.40 %	0.14 %	2.77 %	86.91 %
D1B	Hospital Beds	449,223	448,341	99.80	0.51	2.69	0.08	1.52	95.01
D1C	Oxygen and Supplies	298,074	297,816	99.91	0.49	2.11	0.11	0.20	97.02
D1D	Wheelchairs	160,414	160,345	99.96	0.56	3.39	0.06	0.08	95.87
D1E	Other DME	6	1	16.67	0.00	0.00	0.00	0.00	16.67
D1F	Orthotic Devices	482	386	80.08	1.24	9.13	0.00	0.21	69.50
I1A	Standard Imaging - Chest	1,677,894	1,677,632	99.98	0.39	2.46	0.12	12.34	84.68
I1B	Standard Imaging - Musculoskeletal	972,386	972,215	99.98	0.45	1.99	0.10	31.38	66.05
I1C	Standard Imaging - Breast	222,621	221,096	99.31	0.49	1.49	0.10	7.39	89.85
I1D	Standard Imaging - Contrast G.I.	135,748	135,739	99.99	0.40	1.66	0.16	3.48	94.29
I1E	Standard Imaging - Nuclear Medicine	199,174	199,147	99.99	0.29	1.71	0.12	8.67	89.20
I1F	Standard Imaging - Other	399,176	393,991	98.70	0.50	2.15	0.16	10.33	85.56
I2A	Advanced Imaging - CAT: head	123,028	123,009	99.98	0.44	2.98	0.11	1.15	95.30
I2B	Advanced Imaging - CAT: other	215,877	215,848	99.99	0.37	2.22	0.08	1.20	96.11
I2C	Advanced Imaging - MRI: brain	31,823	31,819	99.99	0.40	2.31	0.09	1.58	95.61
I2D	Advanced Imaging - MRI: other	39,022	39,017	99.99	0.44	2.07	0.12	1.36	96.00
I3A	Echography - Eye	67,837	67,827	99.99	0.43	0.44	0.10	83.55	15.45
I3B	Echography - Abdomen/Pelvis	171,627	171,615	99.99	0.38	1.87	0.11	13.77	83.87
I3C	Echography - Heart	371,530	370,052	99.60	0.35	1.14	0.14	30.85	67.12
I3D	Echography - Carotid Arteries	68,679	68,389	99.58	0.41	1.00	0.09	18.12	79.95
I3E	Echography - Prostate, Transrectal	14,471	14,470	99.99	0.30	0.73	0.08	51.74	47.14
I3F	Echography - Other	64,262	64,162	99.84	0.38	1.70	0.10	15.14	82.51
I4A	Imaging/Proc-Heart,incl.Cardiac Catheterization	76,747	74,752	97.40	0.45	0.69	0.13	35.85	60.29
I4B	Imaging/Procedure - Other	77,779	75,721	97.35	0.46	1.69	0.12	5.64	89.44

TABLE 5-6 (continued)

REFERRING UPIN REPORTING BY BERENSON-EGGERS TYPE OF SERVICE, 1993

		NUMBER OF LINE ITEMS		PERCENT OF TOTAL LINE ITEMS					
					TYPE OF REFERRING UPIN				
							Referring UPIN in Registry		
Code	Berenson-Eggers Type of Service	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
M1A	Office Visits - New	557,544	337,474	60.53 %	1.34 %	0.56 %	0.90 %	43.06 %	14.68 %
M1B	Office Visit - Established	7,669,891	4,794,405	62.51	0.96	0.29	0.54	49.62	11.10
M2A	Hospital Visit - Initial	425,930	238,916	56.09	1.43	0.34	0.42	39.14	14.77
M2B	Hospital Visit - Subsequent	2,711,162	1,805,653	66.60	1.48	0.42	0.38	28.07	36.26
M2C	Hospital Visit - Critical Care	130,823	96,576	73.82	1.48	0.63	0.55	23.66	47.50
M3	Emergency Room Visit	615,155	332,975	54.13	2.37	1.30	0.65	32.38	17.44
M4A	Home Visit	71,149	32,690	45.95	1.16	2.18	0.36	33.76	8.49
M4B	Nursing Home Visit	793,272	342,477	43.17	1.82	0.14	0.40	33.35	7.45
M5A	Specialist - Pathology	611,881	611,766	99.98	0.33	1.40	0.12	8.13	90.01
M5B	Specialist - Psychiatry	630,107	183,394	29.11	3.52	1.51	0.61	9.31	14.16
M5C	Specialist - Opthamology	961,513	395,832	41.17	1.34	0.45	1.27	27.32	10.79
M5D	Specialist - other	133,307	92,212	69.17	1.13	0.32	0.72	39.17	27.82
M6	Consultations	953,530	952,639	99.91	0.52	0.97	0.12	6.85	91.44
O1A	Ambulance	804,400	485,266	60.33	16.05	18.63	0.03	0.08	25.54
O1B	Chiropractic	534,484	85,196	15.94	2.02	0.75	0.08	12.28	0.81
O1C	Enteral and Parenteral	174,119	93,556	53.73	0.64	0.50	0.08	0.36	52.14
O1D	Chemotherapy	163,345	131,861	80.73	0.52	0.20	0.37	50.83	28.82
O1E	Other Drugs	633,736	462,039	72.91	1.09	0.32	0.37	51.58	19.54
O1F	Vision, Hearing and Speech Services	114,893	112,973	98.33	0.75	0.95	0.17	27.38	69.08
O1G	Temporarily Assigned Codes	917,576	595,566	64.91	0.61	0.18	0.02	59.99	4.11
PO	Anesthesia	406,609	271,930	66.88	3.27	0.88	0.32	1.68	60.73
P1A	Major Proc- Breast	4,651	3,094	66.52	1.55	0.28	0.47	10.45	53.77
P1B	Major Proc- Colectomy	9,519	6,973	73.25	1.23	0.30	0.33	9.03	62.36

TABLE 5-6 (continued)

REFERRING UPIN REPORTING BY BERENSON-EGGERS TYPE OF SERVICE, 1993

		NUMBER OF LINE ITEMS		PERCENT OF TOTAL LINE ITEMS					
				TYPE OF REFERRING UPIN					
							Referring UPIN in Registry		
Code	Berenson-Eggers Type of Service	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
P1C	Major Proc- Cholecystectomy	5,625	4,085	72.62 %	1.49 %	0.50 %	0.37 %	9.56 %	60.69 %
P1D	Major Proc- TURP	8,790	6,438	73.24	0.99	0.55	0.34	33.88	37.49
P1E	Major Proc- Hysterectomy	4,489	2,502	55.74	1.85	0.13	0.38	23.12	30.25
P1F	Major Proc- Explor/Decompr/Excis Disc	9,614	6,836	71.10	2.14	0.33	0.27	14.16	54.20
P1G	Major Proc- Other	114,785	85,588	74.56	1.36	0.94	0.29	13.49	58.48
P2A	Major Proc- Cardiovas.- CABG	23,291	19,606	84.18	1.35	0.21	0.12	3.36	79.14
P2B	Major Proc- Cardiovas.- Aneurysm Repair	2,617	1,931	73.79	1.18	0.92	0.34	9.59	61.75
P2C	Major Proc- Cardiovas.- Thromboendarterectomy	4,857	3,823	78.71	1.01	0.41	0.23	8.63	68.44
P2D	Major Proc- Cardiovas.- Coronary Angioplasty	10,439	9,438	90.41	0.60	0.29	0.12	31.98	57.42
P2E	Major Proc- Cardiovas.- Pacemaker Insertion	9,709	8,287	85.35	0.99	0.42	0.10	18.53	65.31
P2F	Major Proc- Cardiovas.- Other	138,760	105,312	75.90	1.66	0.85	0.27	10.57	62.55
P3A	Major Proc- Orthop.- Hip Fracture Repair	12,170	8,041	66.07	1.96	1.04	0.40	25.65	37.03
P3B	Major Proc- Orthop.- Hip Replacement	7,740	5,134	66.33	1.98	0.47	0.71	28.17	35.01
P3C	Major Proc- Orthop.- Knee Replacement	9,528	6,242	65.51	1.62	0.72	0.51	29.49	33.17
P3D	Major Proc- Orthop.- Other	29,575	19,408	65.62	1.91	0.83	0.36	27.02	35.51
P4A	Eye Proc- Corneal Transplant	1,516	801	52.84	1.65	0.20	0.66	18.87	31.46
P4B	Eye Proc-Cataract Removal/Lens Insertion	92,019	53,447	58.08	1.78	0.56	0.76	30.27	24.72
P4C	Eye Proc- Retinal Detachment	3,193	1,902	59.57	1.41	0.28	0.72	16.25	40.90
P4D	Eye Proc- Treatment of Retinal Lesions	13,553	8,104	59.79	1.51	0.59	0.66	20.69	36.35
P4E	Eye - Other	75,305	36,615	48.62	2.04	0.47	1.01	24.92	20.17
P5A	Ambulatory Proc - Skin	159,338	86,599	54.35	1.17	0.33	1.04	33.43	18.38
P5B	Ambulatory Proc - Musculoskeletal	36,100	23,408	64.84	1.91	0.77	0.33	33.83	28.01
P5C	Ambulatory Proc - Inquinal Hernia Repair	9,782	6,473	66.17	1.28	0.32	0.60	11.63	52.34

TABLE 5-6 (continued)

REFERRING UPIN REPORTING BY BERENSON-EGGERS TYPE OF SERVICE, 1993

		NUMBER OF LINE ITEMS		PERCENT OF TOTAL LINE ITEMS					
				TYPE OF REFERRING UPIN					
							Referring UPIN In Registry		
Code	Berenson-Eggers Type of Service	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
P5D	Ambulatory Proc - Lithotripsy	1,438	1,016	70.65 %	1.04 %	0.63 %	0.49 %	37.41 %	31.08 %
P5E	Ambulatory Proc -Other	139,442	106,067	76.07	1.41	0.62	0.34	24.92	48.76
P6A	Minor Procedures - Skin	1,193,409	574,157	48.11	1.16	0.39	1.01	27.73	17.82
P6B	Minor Procedures - Musculoskeletal	230,073	163,260	70.96	1.07	0.52	0.45	51.78	17.13
P6C	Minor Procedures - Other (MFS)	993,343	791,296	79.66	1.21	0.51	0.35	39.57	38.02
P6D	Minor Procedures - Other (non-MFS)	73,037	55,786	76.38	0.61	0.43	0.08	58.46	16.80
P7A	Oncology - Radiation Therapy	291,673	272,799	93.53	0.77	0.95	0.25	7.48	84.08
P7B	Oncology - Other	163,075	133,914	82.12	0.58	0.28	0.36	49.52	31.38
P8A	Endoscopy - Arthroscopy	7,057	4,585	64.97	1.81	0.52	0.40	35.31	26.92
P8B	Endoscopy - Upper G.I.	75,145	57,999	77.18	1.36	0.48	0.34	16.41	58.60
P8C	Endoscopy - Sigmoidoscopy	54,524	40,172	73.68	1.03	0.31	0.42	43.01	28.90
P8D	Endoscopy - Colonoscopy	71,887	52,913	73.61	1.52	0.41	0.51	17.99	53.17
P8E	Endoscopy - Cystoscopy	67,750	54,844	80.95	0.98	0.37	0.28	43.89	35.43
P8F	Endoscopy -Bronchoscopy	14,343	11,489	80.10	1.40	0.43	0.33	20.73	57.21
P8G	Endoscopy - Laparoscopic Cholecystectomy	9,268	6,844	73.85	1.33	0.36	0.25	8.92	62.99
P8H	Endoscopy - Laryngoscopy	15,044	10,230	68.00	1.50	0.58	0.84	30.31	34.77
P8I	Endoscopy - Other	25,111	18,714	74.53	1.26	0.76	0.52	26.58	45.41
P9A	Dialysis Services (MFS)	59,485	35,883	60.32	1.62	0.72	0.24	18.57	39.17
P9B	Dialysis Services (non-MFS)	95,023	42,722	44.96	1.64	0.74	0.54	27.11	14.92
T1A	Lab Tests-Routine Venipuncture (non-MFS)	2,208,141	2,207,398	99.97	0.25	0.67	0.07	59.83	39.14
T1B	Lab Tests - Automated General Profiles	1,439,743	1,439,524	99.98	0.24	0.85	0.10	23.99	74.80
T1C	Lab Tests - Urinalysis	1,046,903	1,046,685	99.98	0.29	0.64	0.08	64.27	34.70
T1D	Lab Tests - Blood Counts	1,853,289	1,852,887	99.98	0.27	0.81	0.08	39.14	59.68

TABLE 5-6 (continued)

REFERRING UPIN REPORTING BY BERENSON-EGGERS TYPE OF SERVICE, 1993

		NUMBER OF LINE ITEMS		PERCENT OF TOTAL LINE ITEMS					
				TYPE OF REFERRING UPIN					
							Referring UPIN in Registry		
Code	Berenson-Eggers Type of Service	Total	Referring UPIN Present[1]	Total	Invalid[2] Referring UPIN	Surrogate UPIN	Died Prior to 7/1/92	Self-Referred	Other
T1E	Lab Tests - Glucose	442,706	442,556	99.97 %	0.27 %	0.92 %	0.09 %	64.43 %	34.26 %
T1F	Lab Tests - Bacterial cultures	345,285	345,241	99.99	0.30	1.32	0.10	24.52	73.74
T1G	Lab Tests - Other (MFS)	171,694	171,569	99.93	0.33	1.24	0.07	5.77	92.51
T1H	Lab Tests - Other (non-MFS)	5,722,523	5,721,567	99.98	0.28	0.82	0.09	25.11	73.69
T2A	Other Tests - Electrocardiograms	585,852	582,388	99.41	0.42	0.76	0.07	78.73	19.43
T2B	Other Tests - Cardiovascular Stress Test	92,296	91,683	99.34	0.33	0.81	0.10	47.09	51.01
T2C	Other Tests - EKG monitoring	78,994	78,600	99.50	0.36	0.84	0.16	48.63	49.51
T2D	Other Tests - Other	600,184	591,624	98.57	0.39	0.85	0.11	46.10	51.13
Y1	Other - Medicare Fee Schedule	12,582	9,379	74.54	2.20	0.54	0.02	33.36	38.42
Y2	Other - Non-Medicare Fee Schedule	296,895	296,877	99.99	0.33	2.14	0.09	1.21	96.22
Z2	Undefined Codes	7	7	100.00	0.00	0.00	0.00	0.00	100.00
	NONMATCHES[3]	190,186	165,595	87.07	7.59	7.52	0.07	7.35	64.55
TOTALS		**45,840,012**	**36,767,192**	**80.21**	**1.13**	**1.17**	**0.30**	**32.68**	**44.93**

NOTES: [1] Any set of characters other than all blanks, all zeros, or all nines.

[2] UPIN not in Registry because of invalid format, reporting/transcription problems, or any other type of error.

[3] No Berenson-Eggers type of service assignment for the HCPCs code.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and Physician Registry (April 4, 1994) file.

the services subject to CWF edits. Within the major procedure category, total referral rates range from 56 percent for hysterectomy to 90 percent for coronary angioplasty. Such difference in variation among sub-categories can be partly explained by low clinical similarity among the sub-categories within major procedures compared to higher degree of similarity of the *purpose* (provision of additional physiological patient information) of lab tests and diagnostic radiology.

The fewest invalid referring UPINs were located in Laboratory tests-automated general profiles line items (0.24 percent).[11] Further, the rate of all laboratory tests with invalid referring UPINs was 0.28 percent. Ambulance services had more than 16 percent of line items contain invalid referring UPINs -- possibly due to the reasons discussed in Section 5.1.4. Ambulance services also had the highest usage of surrogate UPINs at nearly 19 percent. Surrogate UPINs were least used by major procedures-for example, hysterectomy at 0.13 percent. The usage of surrogate UPINs, however, fluctuated within the major procedures category, including hip fracture repair at more than one percent.

Medical equipment and/or devices (wheelchairs, ambulance services, oxygen and supplies, orthotic devices) had the lowest rate of self-referred line-items. The highest self-referral rate was experienced by echography - eye services at 83.55 percent. There was considerable variation in the self-referral rate among laboratory tests with a range from 64 percent for glucose and urinalysis to about six percent for pathology interpretation ("other"). The glucose and urinalysis tests are often performed by in-office labs while the pathology interpretation is less likely to be "in-office."

The overall referring rate from other physicians was nearly 45 percent. As might be expected, each of the three of the imaging categories (standard, advances, and echography) had referring rates from other physicians that was substantially above 45 percent.

5.3 Practice Characteristics of Referring Physicians

Other than the referring physician's UPIN, NCH Part B claims data do not contain any information about the referring physician. By matching the referring UPIN to the Physician Registry, however, some practice characteristics of referring physicians can be determined. Of

[11]Other DME and Undefined Codes had the lowest percentages of invalid referring UPINs, self-referred UPINs, and surrogate UPINs, however, each service had fewer than ten line items.

particular interest are the specialty of referring physicians and the form of practice. Given the increase of specialization, it would be expected that most referrals originate with primary care specialties such as general practice, family practice, and internal medicine. With regard to the form of practice, it is not clear what the referral patterns might look like. For instance, it could be argued that solo practitioners tend to be generalists and thus need to make more referrals than group physicians - particularly if group physicians tend to be specialists. Aside from the validity of some of the assumptions in the hypothesis, other factors may influence referral patterns. For instance, rural solo physicians might not be able to refer their patients to other physicians as readily as urban physicians. The type of group practice, single specialty or multi-specialty, might also influence referral patterns - particularly if multi-specialty groups include primary care physicians.

The analyses were performed at the claim level since the referring physician (UPIN) is a claim-level data element. Since the Registry does not contain information on physicians who were assigned surrogate UPINs during claims processing, the analysis is confined to only those claims that had UPINs that were found in the Registry. Claims that were self-referred or contained a UPIN that belonged to a physician that died prior to July 1992 were also excluded from the analysis. Specialty and form of practice were obtained from practice settings which were active in either the 1993 or 1994 Registry files.

5.3.1 Specialty of Referring Physician

Of the ten million claims with a valid referring UPIN, nearly 65 percent were associated with physicians that have just a single specialty and about 35 percent were from physicians with multiple specialties (Table 5-7). Internal medicine physicians referred over two million claims, about 22 percent of *all* claims in this analysis.

As expected, primary care specialties referred more claims than more delineated specialties. Together, general practitioners, family practice physicians, and internists referred 36.2 percent of all claims, more than half of the claims referred by physicians with single specialties. These three specialties accounted for 27.7 percent of physicians (Registry Distribution

TABLE 5-7

SPECIALTY OF REFERRING PHYSICIANS, 1993

Classification Category		Registry Distribution[1,2]	Number of Claims	Percent of Claims[2]
MULTIPLE SPECIALTY		N/A	3,583,441	35.72 %
SINGLE SPECIALTY			6,447,347	64.27
01	General Practice	7.4	423,386	4.22
02	General Surgery	4.3	391,692	3.90
03	Allergy/Immunology	0.4	10,959	0.11
04	Otolaryngology	1.2	57,206	0.57
05	Anesthesiology	4.2	27,132	0.27
06	Cardiology	2.3	306,809	3.06
07	Dermatology	1.1	75,515	0.75
08	Family Practice	8.1	980,177	9.77
09	Gynecology (Osteo)	0.0	71	0.00
10	Gastroenterology	0.9	99,909	1.00
11	Internal Medicine	12.2	2,224,971	22.18
12	Osteo. Manipulative Therapy	0.2	2,061	0.02
13	Neurology	1.3	83,501	0.83
14	Neurosurgery	0.6	45,322	0.45
15	Obstetrics (Osteo)	0.0	59	0.00
16	Obstetrics/Gynecology	4.8	155,187	1.55
17	Ear, Nose, Throat (Osteo)	0.0	120	0.00
18	Ophthalmology	2.5	207,786	2.07
19	Oral Surgery (Dentists only)	6.2	9,347	0.09
20	Orthopedic Surgery	2.8	298,419	2.98
21	Path. Anat., Clinical Pathology (Osteo)	0.0	3	0.00
22	Pathology	1.8	14,240	0.14
23	Peripheral Vascular Disease (Osteo)	0.0	38	0.00
24	Plastic and Reconstructive Surgery	0.7	20,940	0.21
25	Physical Medicine and Rehabilitation	0.6	50,192	0.50
26	Psychiatry	5.3	104,753	1.04
27	Psychiatry, Neurology (Osteo)	0.0	10	0.00
28	Colorectal Surgery	0.1	6,776	0.07
29	Pulmonary Disease	0.8	114,032	1.14
30	Diagnostic Radiology	3.8	31,152	0.31
31	Roentgenology,Radiology (Osteo)	0.0	5	0.00
32	Radiation Therapy (Osteo)	0.0	104	0.00
33	Thoracic Surgery	0.5	41,931	0.42
34	Urology	1.3	260,441	2.60
35	Chiropractic	7.2	15,522	0.15
36	Nuclear Medicine	0.1	841	0.01
37	Pediatric Medicine	4.3	27,782	0.28
38	Geriatric Medicine	0.1	10,715	0.11
39	Nephrology	0.5	109,346	1.09

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TABLE 5-7

SPECIALTY OF REFERRING PHYSICIANS, 1993

Classification Category		Registry Distribution[1,2]	Number of Claims	Percent of Claims[2]
40	Hand Surgery	0.1	1,482	0.01
41	Optometry	4.2	44,836	0.45
44	Infectious Disease	0.2	5,054	0.05
46	Endocrinology	0.2	10,527	0.10
48	Podiatry	2.3	41,260	0.41
49	Ambulatory Surgical Center	0.1	3,404	0.03
66	Rheumatology	0.2	15,292	0.15
70	Clinic/Other Grp Practice, except GPPP	2.2	18,344	0.18
76	Peripheral Vascular Disease	0.0	780	0.01
77	Vascular Surgery	0.1	7,372	0.07
78	Cardiac Surgery	0.1	5,555	0.06
79	Addiction Medicine	0.0	259	0.00
81	Critical Care (Intensivists)	0.1	2,284	0.02
82	Hematology	0.0	1,276	0.01
83	Hematology/Oncology	0.3	23,909	0.24
84	Preventive Medicine	0.0	438	0.00
85	Maxillofacial Surgery	0.1	1 751	0.02
86	Neuropsychiatry	0.0	279	0.00
90	Medical Oncology	0.1	6,379	0.06
91	Surgical Oncology	0.0	1,194	0.01
92	Radiation Oncology	0.2	4,435	0.04
93	Emergency Medicine	1.7	42,166	0.42
94	Interventional Radiology	0.0	155	0.00
99	Unknown Physician Specialty	0.0	464	0.00
TOTAL CLAIMS		99.8	**10,030,788**	99.9

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and Physician Registry (1993, 1994) file.

NOTES: [1] Special tabulation from the January 1994 Physician Registry. Physicians with multiple specialties were fractionally allocated to each of the specialties. A physician with two specialties would be counted as 0.5 for each rather than 1.0 for each.

[2] Percent does not equal 100 percent due to rounding.
N/A: Not available (see Note 1).

column).[12] Internists, by themselves, referred about 22 percent of all claims but only accounted for 12 percent of all physicians. The next two highest referral rates were from the general surgery and cardiology specialties - specialties that are more "general" than the most specialized. The general surgery and cardiology referral shares were roughly proportional to their specialty share. The lowest referral were for physicians who specialize in plastic or reconstructive surgery, they referred nearly 21,000 claims or 0.21 percent of total claims. The share of referrals by several specialties were considerably lower than their share of all physicians, these include optometry, pediatric medicine, psychiatry, oral surgery, obstetrics/gynecology, and chiropractic. This is not surprising since the services provided by these physicians probably infrequently requires follow-up care by other physicians.

5.3.2 Referring UPINs Form of Practice

Forms of practice for referring physicians were separated into four categories: solo, group, mixed (solo and group), and invalid (Table 5-8). To determine invalid practice settings, if any of the active practice settings contained a code equal to 2, 3, or 5, the form of practice was considered invalid.

While a definitive hypothesis regarding referred patterns was not put forth, it was somewhat surprising that more than six million, or 62 percent of claims were submitted by physicians practicing in both solo and group settings. This rate is considerably higher than the proportion of physicians practicing in both types of settings (29.5 percent). A possible explanation for this finding is that such physicians provide most of their services in a group setting and that only a small share of their services are provided in their separately-maintained offices. If this explanation is correct, then this finding also explains why the proportion of services referred by solo practitioners is lower than the proportion of physicians practicing in such settings. Another possible reason for this finding is that all of the "solo" settings of "mixed-practice" physicians are practice settings that have not been appropriately deactivated by their carrier(s). If so, then all of services provided "mixed-practice" physicians were provided in group settings and, thus, the claims referred by "mixed-practice" should be combined with the "group

[12]Unlike the last two columns in Table 5-7, the "Registry Distribution" column does not contain a multiple specialty row – see the notes to the table. Inferences about the differences between this column and the last column, thus, need to be qualified.

TABLE 5-8

FORM OF PRACTICE OF REFERRING PHYSICIANS, 1993

Form of Practice	Registry Distribution	Number of Claims	Percent of Total Claims
SOLO ONLY	42.3 %	1,643,766	16.39 %
GROUP ONLY	27.4	2,083,345	20.77
MIXED SOLO & GROUP	29.5	6,222,443	62.03
INVALID	0.8	81,234	0.81
TOTALS	**100.0**	**10,030,788**	**100.00**

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and Physician Registry (1993, 1994) file.

only" physicians as well as the physicians themselves. Thus, if the "mixed-practice" physicians are really "group only" physicians, then 57 percent of physicians practice only in group settings and account for nearly 83 percent of the referred claims.

5.4 Integrity of Referring Physician UPINs

Although the overall referring UPIN reporting rate for services subject to the CWF edit policy was quite high (Table 5-1), the results of the other analyses (especially the carrier results) presented in Section 5.1 suggest that the quality of referring UPIN reporting might not be so high. Indeed, the mere presence of a UPIN in the referring UPIN field does not guarantee that a referral took place. As an integrity check, to test whether referrals actually took place, the other claims, for a given beneficiary, were searched in order to determine whether the referring physician had provided other medical care services. The results of this test should be considered "suggestive" rather than definitive. For instance, a beneficiary with a chronic condition might call his/her primary care physician and, after hearing a brief description of the problem, the primary care physician may refer the beneficiary to a specialist. The specialist, in turn, might put the "referring" physician's UPIN into the referring UPIN field even though the referring physician did not bill Medicare for the "phone call" visit. This could help explain lower-than-expected test results. On the other hand, a physician providing a patient with continuing care might still put the referring physician's UPIN on the claim even though it had been many months since the referring physician had last seen the patient. Similarly, the fact that the referring physician provided services to the beneficiary does not mean that the services were for the same condition for which the referral was made.

In order to find the referring physician's UPIN as a performing UPIN in another claim, it was necessary to create an "index" claim. A claim was defined as an "index" claim if the date of service was between April 1, 1993 and September 30, 1993 and there was a valid referring UPIN, excluding self-referred claims and claims in which the referring physician died prior to July 1992. We did not attempt to link index claims by diagnoses due to inconsistencies in diagnostic coding, as symptoms may be interpreted differently depending on the type of physician or specialty. All of the classification variables (e.g., CWF edit policy) are for the index claim rather than for the claim in which the referring physician is found providing services because (1) such characteristics can not be determined for those cases in which the referring physician can not be found

performing services to the beneficiary and (2) in the case of multiple "referring" claims, it is not clear which claim should be the originating "referring" claim. Aside from the classification variables, the index claim was also classified by whether the referring physician was found as a performing physician or not and if so, whether it was within 90 days before or after the index claim's date of service. For physicians found, other than within 90 days, we could search both backwards and forwards beyond 90 days but only to the beginning and end of the calendar year.

5.4.1 CWF Edit Policy

The provision of services by performing UPINs by CWF Edit policy was analyzed at a line-item level (Table 5-9). Of the 10.3 million line items, nearly 75 percent were edited. Overall, on 77 percent of the line items, the referring physician's UPIN was located within 90 days of the index claim. The referring physicians were not found on nearly 20 percent of all line items.

Compared to edited items, non-edited line items have a higher percentage of line items in which the referring physician was found as a performing physician more than 90 days from the index claim (4.86 percent) and referring physician not found as a performing physician (25.38 percent). Among edited line items, durable medical equipment (DME) had the lowest rates of referring physicians found as a performing physician within 90 days (nearly 70 percent) and the highest rates of referring physicians not found as a performing physician (22 percent).

Finding the referring physician as the performing physician within 90 days of the line item's date of service in 77 percent of the cases suggests, despite the prior caveat, that referrals found in the claims actually do represent true referrals. The fact that the referring physician could not be found as a performing physician for 20 percent of the line items could represent (1) the mis-use of a referring UPIN, (2) referrals based on phone calls, or other casual contact, between the beneficiary and the referring physician, or (3) continuing care well after the referring physician had last seen the patient. The second of these three reasons could partially account for the 17 percent of the diagnostic lab and radiology line items in which the referring physician did not provide services that were billed. A referring physician, for instance, may have told the beneficiary complaining of chest pains to get an echo-cardiogram prior to seeing, for example, a cardiologist.

TABLE 5-9

REFERRING PHYSICIANS THAT ARE ALSO PERFORMING PHYSICIANS BY CWF EDIT POLICY, 1993

CWF EDIT POLICY	Number of Line Items	PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN: Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
NON-EDITED ITEM	2,659,612	69.75 %	4.86 %	25.38 %
EDITED ITEM	7,618,240	79.69	2.87	17.44
DURABLE MEDICAL EQUIPMENT, ETC.	470,822	69.67	7.95	22.38
CONSULTATION (TOS=3)	451,660	82.85	1.86	15.29
DIAGNOSTIC RADIOLOGY (TOS=4)	1,662,826	81.10	1.81	17.09
DIAGNOSTIC LABORATORY (TOS=5)	5,032,932	79.88	2.83	17.29
TOTALS	**10,277,852**	**77.12**	**3.38**	**19.50**

NOTES: See text for definition of index claim and the windows for finding a "performing" claim. Only claims between April 1 and September 30, 1993 with a valid referring UPIN (not self-referred or belonging to a physician who died prior to July 1992) were used.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and 1994 Physician Registry file.

5.4.2 HCFA Type of Service

The analysis of provision of services by performing UPINs by HCFA type of service was performed at the line-item level (Table 5-10). Nearly 49 percent of *all* line items are diagnostic laboratory services.

Nearly 91 percent of the referring physicians on anesthesia line items were found as a performing physician within 90 days of the index claim, the highest rate among those services with at least 25,000 line items.[13] Conversely, in only 8.6 percent of anesthesia line items, could the referring physician not be found providing services to the beneficiary, the lowest such rate. About 37 percent of the referring physicians on psychological therapy line items were not found the beneficiaries' other claims as a performing physician, the highest rate among those services with at least 25,000 line items. Such a high rate is suggestive of continuing care in which a referring physician's UPIN was still being placed on a claim well after the initial visit to the therapist.

5.4.3 Berenson-Eggers Type of Service

The analysis of provision of services by performing UPINs by Berenson-Eggers type of service was performed at the line-item level (Table 5-11). In total, laboratory services comprised about 40 percent of the total line items.[14] Other (non-Medicare fee schedule) laboratory tests had 2.1 million line items, or nearly 21 percent of the total line items.

Only 33 percent of the referring physicians on ambulance and vision, hearing, and speech service line items were found as a performing physician within 90 days of the index claim, the lowest rates in Table 5-11. While the vision, hearing, and speech service items may be examples of continuing care, ambulance is not. A possible reason that the rate is low for ambulance services may be due to emergencies in which the spouse of the patient called a primary care physician, who in turn, told the spouse to call an ambulance for transport to an emergency room. The primary care physician's UPIN, then, was put on the claim even though the physician did not

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[13]25,00 is a convenient gap in the data.

[14]The Berenson-Eggers "T1" major category for laboratory services does not include some laboratory services that are included in the HCFA laboratory type of service, hence the lower share of laboratory services as compared to Tables 5-9 and 5-10.

TABLE 5-10

REFERRING PHYSICIANS THAT ARE ALSO PERFORMING PHYSICIANS BY HCFA TYPE OF SERVICE, 1993

HCFA TYPE OF SERVICE			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Line Items	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
0	WHOLE BLOOD OR PACKED RED CELLS	12	75.00 %	0.00 %	25.00 %
1	MEDICAL CARE	1,373,885	65.57	5.59	28.84
2	SURGERY	404,945	72.89	4.46	22.64
3	CONSULTATION	451,660	82.85	1.86	15.29
4	DIAGNOSTIC RADIOLOGY	1,662,826	81.10	1.81	17.09
5	DIAGNOSTIC LABORATORY	5,032,932	79.88	2.83	17.29
6	THERAPEUTIC RADIOLOGY	124,113	83.15	3.14	13.71
7	ANESTHESIA	122,623	90.84	0.57	8.59
8	ASSISTANCE AT SURGERY	19,777	87.54	1.48	10.98
9	OTHER MEDICAL SERVICES	237,002	69.62	4.20	26.18
A	USED DME,PROSTHETICS,ORTHOTICS	669	84.16	2.54	13.30
B	HIGH RISK MAMMOGRAPHY	1,727	79.85	5.04	15.11
C	LOW RISK MAMMOGRAPHY	20,892	80.97	4.38	14.65
F	AMBULATORY SURGICAL SERVICES	13,925	91.98	0.88	7.15
G	IMMUNOSUPPRESSIVE DRUGS	225	82.67	1.78	15.56
I	PURCHASE OF DME(INSTALLMENT BASIS)	2	100.00	0.00	0.00
L	RENAL SUPPLIER IN THE HOME	5,419	72.12	5.09	22.79
M	MONTHLY CAPITATION PAYMENT(DIALYSIS)	1,692	50.77	7.51	41.73
N	KIDNEY DONOR	20	65.00	0.00	35.00
P	LUMPSUM PURCH.OF DME,PROSTHETICS,ORTHOT.	289,675	66.46	6.11	27.43
R	RENTAL OF DME	377,340	67.65	8.80	23.55
T	PSYCHOLOGICAL THERAPY	26,351	57.33	5.96	36.71
U	OCCUPATIONAL THERAPY	1,343	87.79	2.98	9.23
V	PNEUMOCOCCAL VACCINE	5,430	34.27	10.41	55.32
W	PHYSICAL THERAPY	102,960	84.80	2.36	12.84
Y	SECOND OPINION ON ELECTIVE SURGERY	406	79.56	3.45	17.00
Z	THIRD OPINION ON ELECTIVE SURGERY	1	100.00	0.00	0.00
TOTALS		**10,277,852**	**77.12**	**3.38**	**19.50**

NOTES: See text for definition of index claim and the windows for finding a "performing" claim. Only claims between April 1 and September 30, 1993 with a valid referring UPIN (not self-referred or belonging to a physician who died prior to July 1992) were used.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and 1994 Physician Registry file.

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TABLE 5-11

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY BERENSON-EGGERS TYPE OF SERVICE, 1993

BERENSON-EGGERS TYPE OF SERVICE			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Line Items	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
D1A	Medical/Surgical Supplies	240,111	68.28 %	7.98 %	23.74 %
D1B	Hospital Beds	221,263	72.50	7.51	19.99
D1C	Oxygen and Supplies	149,156	61.77	10.30	27.93
D1D	Wheelchairs	78,844	100.00	0.00	0.00
D1E	Other DME	1	80.17	1.72	18.10
D1F	Orthotic Devices	116	82.20	1.41	16.39
I1A	Standard Imaging - Chest	673,172	75.86	2.40	21.75
I1B	Standard Imaging - Musculoskeletal	323,990	79.83	4.57	15.60
I1C	Standard Imaging - Breast	96,324	87.09	1.27	11.64
I1D	Standard Imaging - Contrast G.I.	64,433	85.11	1.52	13.38
I1E	Standard Imaging - Nuclear Medicine	87,763	79.61	1.94	18.45
I1F	Standard Imaging - Other	167,910	81.23	1.17	17.60
I2A	Advanced Imaging - CAT: head	57,381	85.73	1.34	12.93
I2B	Advanced Imaging - CAT: other	103,644	85.42	1.21	13.36
I2C	Advanced Imaging - MRI: brain	15,159	85.84	1.18	12.98
I2D	Advanced Imaging - MRI: other	18,958	62.72	4.97	32.31
I3A	Echography - Eye	5,295	83.80	1.62	14.59
I3B	Echography - Abdomen/Pelvis	71,816	81.79	1.83	16.38
I3C	Echography - Heart	122,036	83.76	1.95	14.29
I3D	Echography - Carotid Arteries	27,291	79.15	3.58	17.28
I3E	Echography - Prostate, Transrectal	3,160	80.67	2.35	16.98
I3F	Echography - Other	26,779	80.53	2.24	17.23
I4A	Imaging/Proc-Heart,incl.Cardiac Catheterization	22,830	85.26	1.18	13.56
I4B	Imaging/Procedure - Other	35,268	66.34	4.27	29.39
M1A	Office Visits - New	41,650	53.89	8.78	37.33
M1B	Office Visit - Established	429,043	66.60	4.39	29.01
M2A	Hospital Visit - Initial	31,099	79.77	2.11	18.12
M2B	Hospital Visit - Subsequent	477,510	81.02	1.68	17.30
M2C	Hospital Visit - Critical Care	29,816	62.92	1.99	35.09

TABLE 5-11 (continued)

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY BERENSON-EGGERS TYPE OF SERVICE, 1993

BERENSON-EGGERS TYPE OF SERVICE			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Line Items	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
M3	Emergency Room Visit	52,774	39.36 %	6.81 %	53.83 %
M4A	Home Visit	2,820	56.03	6.07	37.91
M4B	Nursing Home Visit	29,128	88.34	0.78	10.87
M5A	Specialist - Pathology	273,502	64.32	4.49	31.19
M5B	Specialist - Psychiatry	44,676	50.27	8.35	41.39
M5C	Specialist - Opthamology	52,893	73.48	5.52	20.99
M5D	Specialist - other	18,638	82.63	1.92	15.45
M6	Consultations	428,822	66.43	2.44	31.13
O1A	Ambulance	99,204	33.32	4.18	62.51
O1B	Chiropractic	2,371	60.73	4.76	34.51
O1C	Enteral and Parenteral	47,942	56.15	12.25	31.60
O1D	Chemotherapy	23,812	63.10	8.95	27.96
O1E	Other Drugs	64,457	77.06	5.07	17.86
O1F	Vision, Hearing and Speech Services	42,048	33.91	10.65	55.44
O1G	Temporarily Assigned Codes	5,078	90.84	0.57	8.58
PO	Anesthesia	123,023	82.21	2.95	14.84
P1A	Major Proc- Breast	1,287	86.24	1.61	12.15
P1B	Major Proc- Colectomy	2,988	86.10	1.56	12.34
P1C	Major Proc- Cholecystectomy	1,734	75.57	4.08	20.35
P1D	Major Proc- TURP	1,543	85.78	2.69	11.53
P1E	Major Proc- Hysterectomy	668	78.90	4.66	16.44
P1F	Major Proc- Explor/Decompr/Excis Disc	2,683	83.25	2.05	14.70
P1G	Major Proc- Other	33,137	87.70	0.81	11.48
P2A	Major Proc- Cardiovas.- CABG	9,205	84.20	2.11	13.68
P2B	Major Proc- Cardiovas.- Aneurysm Repair	804	85.31	1.37	13.32
P2C	Major Proc- Cardiovas.- Thromboendarterectomy	1,749	80.00	2.24	17.76
P2D	Major Proc- Cardiovas.- Coronary Angioplasty	2,990	83.68	1.67	14.65
P2E	Major Proc- Cardiovas.- Pacemaker Insertion	3,112	83.62	1.55	14.83
P2F	Major Proc- Cardiovas.- Other	42,963	79.07	1.57	19.36

TABLE 5-11 (continued)

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY BERENSON-EGGERS TYPE OF SERVICE, 1993

BERENSON-EGGERS TYPE OF SERVICE			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Line Items	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
P3A	Major Proc- Orthop.- Hip Fracture Repair	2,231	80.62 %	3.24 %	16.14 %
P3B	Major Proc- Orthop.- Hip Replacement	1,326	82.29	3.04	14.67
P3C	Major Proc- Orthop.- Knee Replacement	1,513	76.02	4.26	19.72
P3D	Major Proc- Orthop.- Other	5,304	74.19	6.05	19.76
P4A	Eye Proc- Corneal Transplant	248	83.16	2.09	14.74
P4B	Eye Proc-Cataract Removal/Lens Insertion	11,238	71.56	8.21	20.22
P4C	Eye Proc- Retinal Detachment	633	53.49	11.81	34.69
P4D	Eye Proc- Treatment of Retinal Lesions	2,548	72.16	5.69	22.16
P4E	Eye - Other	7,614	68.48	5.52	26.00
P5A	Ambulatory Proc - Skin	14,772	71.48	4.12	24.39
P5B	Ambulatory Proc - Musculoskeletal	5,092	81.49	3.54	14.98
P5C	Ambulatory Proc - Inquinal Hernia Repair	2,544	76.52	5.22	18.26
P5D	Ambulatory Proc - Lithotripsy	230	79.36	3.46	17.18
P5E	Ambulatory Proc -Other	33,843	64.57	6.27	29.16
P6A	Minor Procedures - Skin	106,902	62.06	7.27	30.67
P6B	Minor Procedures - Musculoskeletal	20,108	74.14	4.09	21.77
P6C	Minor Procedures - Other (MFS)	191,275	77.43	2.44	20.12
P6D	Minor Procedures - Other (non-MFS)	5,158	83.19	3.16	13.65
P7A	Oncology - Radiation Therapy	121,629	53.82	12.75	33.43
P7B	Oncology - Other	26,244	75.38	4.92	19.69
P8A	Endoscopy - Arthroscopy	975	81.81	2.85	15.34
P8B	Endoscopy - Upper G.I.	21,935	73.46	4.98	21.56
P8C	Endoscopy - Sigmoidoscopy	7,857	79.29	3.85	16.86
P8D	Endoscopy - Colonoscopy	19,230	72.62	4.90	22.47
P8E	Endoscopy - Cystoscopy	11,849	83.64	1.91	14.45
P8F	Endoscopy -Bronchoscopy	4,027	87.40	1.53	11.07
P8G	Endoscopy - Laparoscopic Cholecystectomy	3,007	73.60	3.90	22.49

TABLE 5-11 (continued)

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY BERENSON-EGGERS TYPE OF SERVICE, 1993

BERENSON-EGGERS TYPE OF SERVICE			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Line Items	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
P8H	Endoscopy - Laryngoscopy	2,614	80.77 %	2.65 %	16.57 %
P8I	Endoscopy - Other	5,581	71.76	4.13	24.12
P9A	Dialysis Services (MFS)	11,220	39.85	8.31	51.84
P9B	Dialysis Services (non-MFS)	6,692	74.68	4.13	21.19
T1A	Lab Tests-Routine Venipuncture (non-MFS)	431,636	82.18	2.58	15.24
T1B	Lab Tests - Automated General Profiles	537,238	74.06	3.90	22.04
T1C	Lab Tests - Urinalysis	181,121	79.23	3.01	17.76
T1D	Lab Tests - Blood Counts	552,495	73.59	4.04	22.37
T1E	Lab Tests - Glucose	76,671	75.64	3.12	21.25
T1F	Lab Tests - Bacterial cultures	126,672	80.55	1.94	17.51
T1G	Lab Tests - Other (MFS)	77,457	81.71	2.57	15.72
T1H	Lab Tests - Other (non-MFS)	2,144,568	63.15	5.38	31.48
T2A	Other Tests - Electrocardiograms	56,292	77.45	3.40	19.15
T2B	Other Tests - Cardiovascular Stress Test	23,503	78.68	2.21	19.11
T2C	Other Tests - EKG monitoring	19,233	72.97	4.04	22.99
T2D	Other Tests - Other	154,455	71.65	4.11	24.24
Y1	Other - Medicare Fee Schedule	2,260	70.28	4.02	25.70
Y2	Other - Non-Medicare Fee Schedule	141,000	100.00	0.00	0.00
Z2	Undefined Codes	1	100.00	0.00	0.00
	NONMATCHES[1]	59,942	76.02	4.34	19.65
TOTALS		**10,277,852**	**77.12**	**3.38**	**19.50**

NOTES: See text for definition of Index claim and the windows for finding a "performing" claim. Only claims between April 1 and September 30, 1993 with a valid referring UPIN (not self-referred or belonging to a physician who died prior to July 1992) were used.

[1] No Berenson-Eggers type of service assignment for the HCPCs code.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and 1994 Physician Registry file.

see the patient, perhaps because the patient might have died during transport or in the emergency room. Some support for this hypothesis is in the low 90-day rate, 39 percent, for emergency room visits. Wheelchair services had a 100 percent rate of line items in which the referring physician was found as the performing physician. Among major procedures, the percentage of referring physicians found as the performing physician within 90 days of the index claim was generally above 80 percent.

The reporting rate of line items not found were lowest for wheelchair services at 0.00 percent. As stated previously regarding the reporting of line items within 90 days, the highest rate of line items not found were ambulance and vision, hearing, and speech services at 62.5 percent and 55.4 percent respectively.

5.4.4 Specialty

The analysis of provision of services by performing UPINs by specialty of performing UPIN was performed at the claims level (Table 5-12). Overall, the referring physician was found as a performing physician within 90 days of the index claim in 76 percent of the five million claims.

Of the total claims, diagnostic radiology and individual billing clinical laboratories comprise 48 percent of the total claims. The referring physician was found as the performing physician within 90 days of the index claim for more than 81 percent of the claims both of these specialties. Claims from physicians that made referrals to pathologists and anesthesiologists were found in about 90 percent of the cases. Along with diagnostic radiology, these three specialties tend to be hospital-based. Claims from physicians that made referrals to primary care physicians (general practice, family practice, and internal medicine) were found less frequently, ranging from 54 percent for family practice to 69 percent for internal medicine. Since primary care physicians are less likely than specialists to receive referrals, this low trace rate[15] suggests that HCFA's instructions for reporting referring/ordering UPINs might be not sufficiently explicit for some types of cases.

Among specialties with more than 25,000 claims, family practice had the highest rate of referring physician not found as the performing physician at 46 percent. CRNA anesthesia

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[15]*Trace rate* refers to finding a claim from the referring physician.

TABLE 5-12

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY SPECIALTY OF THE INDEX CLAIM, 1993

Specialty			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Number of Claims	Number of Claims	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
01	General Practice	37,626	56.38 %	3.36 %	40.25 %
02	General Surgery	103,459	76.87	4.18	18.95
03	Allergy/Immunology	5,060	56.66	8.66	34.68
04	Otolaryngology	31,927	69.03	5.43	25.53
05	Anesthesiology	95,690	88.46	0.96	10.58
06	Cardiology	225,639	73.79	4.23	21.98
07	Dermatology	26,372	67.86	4.89	27.25
08	Family Practice	54,741	48.08	6.03	45.89
09	Gynecology (Osteo)	5	0.00	0.00	100.00
10	Gastroenterology	74,495	76.30	3.98	19.71
11	Internal Medicine	186,077	64.61	4.74	30.64
12	Osteo. Manipulative Therapy	419	43.91	9.31	46.78
13	Neurology	79,524	75.90	3.48	20.63
14	Neurosurgery	13,773	74.91	4.25	20.84
15	Obstetrics (Osteo)	3	100.00	0.00	0.00
16	Obstetrics/Gynecology	10,402	60.86	5.82	33.32
18	Ophthalmology	73,506	53.99	8.12	37.89
19	Oral Surgery (Dentists only)	890	54.61	2.47	42.92
20	Orthopedic Surgery	63,217	67.75	5.81	26.45
21	Path. Anat., Clinical Pathology (Osteo)	15	20.00	0.00	80.00
22	Pathology	169,190	88.28	0.95	10.77
23	Peripheral Vascular Disease (Osteo)	167	74.25	5.99	19.76
24	Plastic and Reconstructive Surgery	8,154	69.63	5.68	24.69
25	Physical Medicine and Rehabilitation	29,608	77.80	3.21	18.99
26	Psychiatry	29,272	66.49	4.25	29.26
27	Psychiatry, Neurology (Osteo)	15	80.00	0.00	20.00

TABLE 5-12 (continued)

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY SPECIALTY OF THE INDEX CLAIM, 1993

Specialty			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Claims	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
28	Colorectal Surgery	4,091	70.42 %	7.21 %	22.37 %
29	Pulmonary Disease	58,108	76.66	3.36	19.98
30	Diagnostic Radiology	1,019,946	82.07	1.82	16.11
31	Roentgenology,Radiology (Osteo)	157	73.25	1.27	25.48
33	Thoracic Surgery	21,765	78.14	2.89	18.96
34	Urology	84,795	67.28	6.61	26.11
35	Chiropractic	1,366	30.67	4.69	64.64
36	Nuclear Medicine	10,048	81.48	1.57	16.95
37	Pediatric Medicine	1,264	57.67	3.24	39.08
38	Geriatric Medic. ie	1,378	65.02	4.57	30.41
39	Nephrology	24,991	64.78	4.84	30.37
40	Hand Surgery	1,242	64.65	8.05	27.29
41	Optometry	13,613	58.09	5.51	36.40
42	Certified Nurse Midwife	1	100.00	0.00	0.00
43	CRNA, Anesthesia Asst.	28,464	91.93	0.55	7.51
44	Infectious Disease	13,740	80.72	2.24	17.04
45	Mammography Screening Center	1,187	74.89	4.89	20.22
46	Endocrinology	10,206	69.59	4.65	25.76
48	Podiatry	90,586	66.63	6.05	27.32
49	Ambulatory Surgical Center	13,463	91.51	0.92	7.57
50	Nurse Practitioner	1,177	62.36	5.78	31.86
51	Med Supply Co. with Cert. Orthotist	5,740	60.07	6.93	33.00
52	Med Supply Co. with Cert. Prosthetist	1,545	65.44	7.38	27.18
53	Med Supply Co.with Cert.Orthotist-Prosth.	8,925	63.06	6.94	30.01
54	Med Supply Co. not included in 51-53	281,130	68.19	7.93	23.87
55	Individual Cert. Orthotist	192	76.56	0.00	23.44

TABLE 5-12 (continued)

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY SPECIALTY OF THE INDEX CLAIM, 1993

Specialty			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Claims	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
56	Individual Cert. Prosthetist	51	68.63 %	13.73 %	17.65 %
57	Individual Cert. Orthotist-Prosthetist	80	48.75	7.50	43.75
58	Individuals not included in 55-57	8,228	68.22	7.62	24.16
59	Ambulance Service Supplier	39,546	67.18	2.30	30.52
60	Public Health or Welfare Agencies	87	11.49	2.30	86.21
62	Ind.-Billing Psychologist	107	60.75	2.80	36.45
63	Portable X-Ray Supplier	35,473	74.01	3.28	22.71
64	Ind.-Billing Audiologist	3,625	71.26	3.83	24.91
65	Ind.-Billing Physical Therapist	26,573	84.64	2.66	12.69
66	Rheumatology	14,797	63.02	8.06	28.92
67	Ind.-Practicing Occupational Therapist	762	88.58	4.07	7.35
68	Clinical Psychologist	6,465	70.80	4.36	24.84
69	Ind.-Billing Clinical Laboratory	1,386,397	81.01	2.69	16.31
70	Clinic/Other Grp Practice, except GPPP	104,915	73.80	3.05	23.15
75	Other Medical Care, GPPP	268	77.61	5.97	16.42
76	Peripheral Vascular Disease	1,579	78.40	4.37	17.23
77	Vascular Surgery	13,386	75.62	3.59	20.79
78	Cardiac Surgery	4,684	82.13	2.31	15.56
79	Addiction Medicine	84	66.67	1.19	32.14
80	Licensed Clinical Social Worker	1,957	66.12	4.45	29.43
81	Critical Care (Intensivists)	2,866	71.49	2.72	25.79
82	Hematology	2,040	60.59	6.18	33.24
83	Hematology/Oncology	50,913	57.35	9.75	32.90
84	Preventive Medicine	159	81.13	1.89	16.98
85	Maxillofacial Surgery	342	66.67	5.26	28.07
86	Neuropsychiatry	743	74.02	1.75	24.23

TABLE 5-12 (continued)

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY SPECIALTY OF THE INDEX CLAIM, 1993

Specialty			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Claims	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
87	All Other Suppliers	183,653	67.37 %	7.70 %	24.93 %
88	Unknown Supplier/Provider Specialty	11,796	78.16	2.75	19.09
89	Unassigned	58	72.41	8.62	18.97
90	Medical Oncology	13,721	57.87	9.74	32.40
91	Surgical Oncology	1,067	60.17	5.34	34.49
92	Radiation Oncology	26,150	77.67	4.43	17.90
93	Emergency Medicine	18,917	60.44	2.14	37.42
94	Interventional Radiology	7,223	85.27	1.74	12.99
95	Ind. Physiological Lab.	25,619	68.03	5.92	26.05
97	Physician Assistant	3,052	62.42	7.90	29.69
99	Unknown Physician Specialty	709	62.48	5.92	31.59
TOTALS		**5,016,458**	**76.12**	**3.65**	**20.23**

NOTES: See text for definition of index claim and the windows for finding a "performing" claim. Only claims between April 1 and September 30, 1993 with a valid referring UPIN (not self-referred or belonging to a physician who died prior to July 1992) were used.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and 1994 Physician Registry file.

assistants had a 7.5 percent rate of referring physicians not found as the performing physician. Of specialties with less than 25,000 claims, many specialties (e.g., hematology at 33.2 percent) often had a high proportion of claims in which the referring physician was not found as the performing physician.

5.4.5 Carrier

The analysis of provision of services by performing UPINs by carrier was performed at the claims level (Table 5-13). Among all carriers[16], Florida BC/BS and Pennsylvania BS (Pennsylvania) had 756,432 claims, or 15 percent of the total volume of claims. Aetna (Alaska) and North Dakota BC/BS (Wyoming) each had about 0.1 percent of the total claims.

Aetna (Hawaii) had the highest percentage of claims (88.5 percent) in which the referring physician was found as the performing physician within 90 days of the index claim. In contrast, Group Health Insurance (New York) had the lowest percentage of claims (61.5 percent) in which the referring physician was found as the performing physician within 90 days of the index claim.

It is interesting to note that the three New York carriers, Empire BC/BS, Blue Shield of Western New York, and Group Health Insurance had rates greater than 26 percent of claims in which the referring physician was not found as the performing physician. This finding is possibly due to relatively more group practices in New York than in other areas. Specifically, the low trace rates for the New York carriers could be due to the billing practices of groups. For instance, a group PIN or just one physician's PIN (among several providing care) might be reported for each line item rather than the individual PINs. If this happens, then the UPIN of the referring physician, even if accurate, can not be found as a performing UPIN in claims submitted by the group.

5.4.6 Assignment Status

The analysis of provision of services by performing UPINs by assignment status was performed at the claim level (Table 5-14). This analysis excluded services in which a performing

[16]S.S.S Virgin Islands was excluded from the analysis.

TABLE 5-13

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY CARRIER, 1993

CARRIER			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Line Items	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
00510	Alabama BC/BS	76,441	80.01 %	3.31 %	16.68 %
00520	Arkansas BC/BS, AR	46,044	78.34	3.38	18.28
00528	Arkansas BC/BS, LA	75,905	78.44	3.52	18.04
00542	California BS	224,454	72.44	3.66	23.90
00550	Colorado BC/BS	46,335	74.23	4.23	21.53
00570	Pennsylvania BS, DE	145,909	84.91	2.90	12.18
00580	Pennsylvania BS, DC	79,391	71.72	4.11	24.17
00590	Florida BC/BS	393,945	79.50	3.50	17.00
00621	Illinois BC/BS	182,098	78.42	3.34	18.24
00630	Indiana BC/BS	87,062	77.96	3.88	18.16
00640	Iowa BS	52,217	78.63	4.17	17.21
00650	Kansas BS, KS	30,227	81.71	3.72	14.57
00655	Kansas BS, NE	25,897	79.07	4.07	16.86
00660	Kentucky BC/BS	87,388	79.51	3.21	17.28
00690	Maryland Blue Shield	69,839	75.46	3.57	20.97
00700	C&S Administrative Services, MA	140,470	78.13	2.99	18.88
00710	Michigan BC/BS	218,218	71.89	4.01	24.10
00720	Minnesota BC/BS	14,749	81.64	2.56	15.80
00740	Kansas BS, MO	38,304	76.27	4.18	19.55
00751	Montana BC/BS	12,352	84.82	3.24	11.94
00780	C&S Administrative Services, NH	26,290	80.59	3.23	16.18
00801	Blue Shield of Western New York	119,002	70.24	3.75	26.01
00803	Empire BC/BS, NY	203,685	68.19	3.45	28.36
00820	North Dakota BC/BS, ND-SD	23,326	81.08	3.33	15.60
00825	North Dakota BC/BS, WY	4,341	78.55	4.68	16.77
00860	Pennsylvania BS, NJ	239,431	72.53	4.05	23.42

TABLE 5-13 (continued)

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY CARRIER, 1993

CARRIER			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Line Items	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
00865	Pennsylvania BS, PA	362,487	75.83 %	4.40 %	19.77 %
00870	Rhode Island Blue Shield	24,927	81.98	3.02	14.99
00880	South Carolina BC/BS	62,665	68.83	4.31	26.86
00900	Texas BC/BS	268,398	78.21	3.91	17.88
00910	Utah BC/BS	16,225	73.98	4.57	21.45
00932	Washington Physician Service	69,751	79.96	3.66	16.38
00951	Wisconsin Physician Service	79,967	77.37	3.60	19.02
00973	S.S.S., PR	44,559	69.07	3.17	27.75
00974	S.S.S., VI	48	50.00	4.17	45.83
01020	Aetna Life and Casualty, AK	1,860	75.43	2.42	22.15
01030	Aetna Life and Casualty, AZ	64,550	77.38	3.35	19.26
01040	Aetna Life and Casualty, GA	116,370	75.88	3.55	20.57
01120	Aetna Life and Casualty, HI	11,849	88.50	2.10	9.40
01290	Aetna Life and Casualty, NV	23,107	77.27	3.36	19.37
01360	Aetna Life and Casualty, NM	15,667	78.85	3.76	17.39
01370	Aetna Life and Casualty, OK	49,065	82.37	3.28	14.35
01380	Aetna Life and Casualty, OR	37,973	78.33	4.06	17.61
02050	Transamerica Occidental	207,812	75.15	3.20	21.65
05130	Connecticut General Insurance, ID	11,275	80.36	3.93	15.71
05440	Connecticut General Insurance, TN	97,153	77.53	3.81	18.66
05535	Connecticut General Insurance, NC	195,649	73.40	3.15	23.45
10230	Travelers Insurance Co., CT	83,258	75.35	3.88	20.77
10240	Travelers Insurance Co., MN	35,514	80.40	2.60	17.01
10250	Travelers Insurance Co., MS	37,374	78.83	3.74	17.43
10490	Travelers Insurance Co., VA	71,048	77.37	3.82	18.81

TABLE 5-13 (continued)

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY CARRIER, 1993

CARRIER			PERCENT OF LINE ITEMS IN WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Code	Name	Number of Line Items	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
11260	Missouri General Am. , MO	71,958	74.17 %	3.95 %	21.88 %
14330	Group Health Insurance, NY	26,539	61.52	5.23	33.25
16360	Nationwide Insurance Co., OH	212,435	76.89	3.46	19.65
16510	Nationwide Insurance, WV	30,945	77.19	3.63	19.18
21200	C&S Administrative Serv.,ME	22,710	76.68	3.33	19.99
TOTALS		**5,016,458**	**76.12**	**3.65**	**20.23**

NOTES: See text for definition of Index claim and the windows for finding a "performing" claim. Only claims between April 1 and September 30, 1993 with a valid referring UPIN (not self-referred or belonging to a physician who died prior to July 1992) were used.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and 1994 Physician Registry file.

TABLE 5-14

REFERRING PHYSICIANS FOUND AS PERFORMING PHYSICIANS BY ASSIGNMENT STATUS, 1993

HCFA TYPE OF SERVICE		PERCENT OF CLAIMS WHICH THE REFERRING PHYSICIAN WAS FOUND AS A PERFORMING PHYSICIAN		
Assignment	Number of Claims	Within 90 Days of the Index Claim	More than 90 Days from the Index Claim	Not Found
UNASSIGNED	179,499	75.65 %	4.20 %	20.15 %
ASSIGNED	2,895,611	75.93	3.31	20.76
TOTALS	**3,075,110**	**75.91**	**3.36**	**20.73**

NOTES: See text for definition of index claim and the windows for finding a "performing" claim. Only claims between April 1 and September 30, 1993 with a valid referring UPIN (not self-referred or belonging to a physician who died prior to July 1992) were used.

SOURCE: HER tabulations based on 1993 5% Beneficiary Sample Standard Analytical File (Part B Physician/Supplier claims only) and 1994 Physician Registry file.

UPIN was not present. Of the three million claims, greater than 94 percent are assigned. There is no difference by assignment status in any of the reporting rates.

5.5 Discussion

The reporting of referring UPINs on Medicare claims improved dramatically between the first quarter of 1992 and 1993. Since the CWF edit policy only became effective on January 1, 1992, it is not surprising that the 1993 data shows great improvement in referring UPIN reporting. About 77 percent of all line items had a valid referring UPIN present and, including self-referrals, about 98 percent of the line items subject to CWF edit policy had a valid referring UPIN (Table 5-1).

With nearly 99 percent of the diagnostic laboratory line items having had a valid referring UPIN these results, in the first instance, suggest that it might be possible to allocate clinical laboratory services on the basis of the referring UPIN. Before adopting such a policy change, however, further studies on physician specialty and variation in referring UPIN reporting may be warranted. Although physician specialty, *per se*, was not the subject of a comprehensive analysis, nearly 36 percent of the claims which had a valid referring UPIN (not self-referred) were associated with physicians with more than one specialty (Table 5-7). Further analysis of multi-specialty physicians would reveal whether the specialties are within or cut across the primary care, surgical, and non-surgical specialty groupings used for MVPS limits.

There was significant variation in referring UPIN reporting by carrier that can not be explained by the current analysis. Additionally, the referring physician's UPIN could not be found as a performing UPIN, for a given beneficiary, in about 17 percent of the diagnostic laboratory and radiology line items (Table 5-9). While plausible explanations can be put forth to account for the observed variation, only some of them can be directly examined using claims data. For instance, variation in carrier referring UPIN reporting rates might be due to variation in mix of services subject to CWF edit policy. This could be examined in claims analyses. Conversely, the continuing care hypothesis used to explain the absence of the referring physician's UPIN as a performing UPIN may not be testable using claims data.

Finally, we note that the trace rate depends on the accuracy of the performing physician reporting. If there are frequent errors in the accuracy of the reported PIN for the performing physician, then it is not likely we would find the actual physician who made the referral. This

problem is mostly likely to arise in claims submitted by group practices. Specifically, some groups repeatedly bill under a single PIN/UPIN. In such cases, group members who actually were responsible for referrals would not be found as performing physicians.

APPENDIX A

REFORMATTING REGISTRY AND NCH CLAIMS PINs

APPENDIX A

REFORMATTING REGISTRY AND NCH CLAIMS PINs

As noted in Chapter 3, the length of the PIN field is ten bytes in NCH claims data and 14 bytes in the Physician Registry. Additionally, the PINs in these fields are "as submitted." That is, HCFA does not perform any validity checks or edits on the PINs in NCH claims and Transamerica Occidental Life Insurance Company (TOLIC) also does not perform such data checks or edits on the PINs in the Registry.

In order to facilitate the matching of claims PINs to Registry PINs, Health Economics Research, Inc. (HER) justified and edited PINs according to a set of editing rules first created by the Urban Institute (UI) and then modified by HER. The rules are based upon 1992 and 1993 NCH Part B claims and 1993 and 1994 Registry files - they may need to be updated when working with more recent data. Most of the rules are applied to Registry PINs since Registry PINs are longer than claims PINs. A shorter set of editing rules were also applied to the claims data.

The result of the editing rules is a new PIN that is usually a transformation of the original Registry or claims PIN. The "rule numbers" are set off in the following SAS code as comments (e.g., /* 1*/). Rule numbers without an 'A' prefix are UI's original rules while rule numbers with an 'A' prefix are either modified UI rules or rules created by HER. Additional comments above the relevant SAS code indicate, in general, the edits embodied in each rule. Prospective users should perform their own data dumps, particularly when they do not understand the reason for the actual SAS code used. The Registry rules are listed first while the Part B (claims) rules are listed second. Note that the carrier identification code (CARRIER) is a numeric field rather than an alphanumeric field. The following SAS code is available from NTIS.

```
*------------------ Registry Rules ---------------------------------;

DATA WORK1.A;
     SET IN1.REGISTRY;
     KEEP CARRIER PIN;
     IF CARRIER NOT IN (570,580,690,700,710,803,865,910,21200,
                        10072,10074 );
RUN;

DATA WORK2.A ERROR(KEEP=CARRIER OLD_PIN);
     SET WORK1.A;
     INFORMAT NEW_PIN   $10.
              RULE      $10.
              LPIN      $14.
              RPIN      $14.;

*--------- LEFT/RIGHT JUSTIFICATION --------------------------;
     LPIN = LEFT(PIN);
     RPIN = RIGHT(PIN);

*----- FIND POSITION OF LAST NON-BLANK CHARACTER IN THE PIN ------;
     NBLANK = 0;
     DO I = 14 TO 1 BY -1;
        IF SUBSTR(PIN,I,1) NOT = ' ' THEN DO;
           NBLANK = I;
           LEAVE;
        END;
     END;
*-----------------------------------------------------------------;

     NEW_PIN = '          ';
     FLC = 0;
     SELECT (CARRIER);

 /* Rule 1: left-justify Registry PIN and use only the first 9 bytes */

    /* 1*/  WHEN (  510,  542,
                  1290,10230,
                  10490,11260)
```

```
          DO;
            NEW_PIN = SUBSTR( LPIN,1,9) ;
            RULE = 'RULE  1';
          END;

/* Rule A9: Use only the first 10 bytes */

   /*A9*/  WHEN(  520,  528,  590,  630,  650,  655,  660,  720,
                  740,  870,  880,  900,  932,  973, 1020, 1030,
                 1040,10240,10250,
                 1120, 1360, 1370, 1380, 2050, 5130, 5440, 5535)
          DO;

              NEW_PIN = SUBSTR(PIN,1,10);
              RULE = 'RULE A9';
          END;

/* Rule A1:      left-justify Registry PIN, then replace any '06' prefix with
                 2 zeroes, then replace all leading zeroes by blanks, left-
                 justify the resulting PIN. */

   /*A1*/  WHEN(  550)
          DO;
              IF SUBSTR(LPIN,1,2) = '06' THEN
                 SUBSTR(LPIN,1,2) = '00';

              J1 = 0;
              DO I = 1 TO 14 WHILE (J1 = 0);
                 IF SUBSTR(LPIN,I,1) NOT = '0' THEN J1 = I;
                 ELSE SUBSTR(LPIN,I,1) = ' ';
              END;
              NEW_PIN = LEFT(LPIN);
              RULE = 'RULE A1';
          END;

/* Rule 10:      right-justify and then use the last 6 bytes as the new first
                 6 bytes of the new PIN (blanks fill-out the field */

   /*10*/  WHEN(  621,  801)
          DO;
```

```
            NEW_PIN = SUBSTR( RPIN,9,6) ;
            RULE = 'RULE 10';
        END;

/* Rule A2:      take the 5 right-most non-blank bytes and place them into
                 the last 5 byte positions of the new PIN with zeroes used to
                 pad the 5 left-most bytes.

        Note: if fewer than 5 non-blank bytes in Registry PIN, then left-
              justify resulting PIN so there is no leading blanks. */

   /*A2*/  WHEN(  640)
        DO;
            J = NBLANK;
            J2 = 5;
            DO I = 10 TO 1 BY -1 WHILE (J2 > 0);
               IF SUBSTR(PIN,J,1) NOT = ' ' & I > 5 THEN
               DO;
                  SUBSTR(NEW_PIN,I,1) = SUBSTR(PIN,J,1);
                  J = J - 1;
               END;
               ELSE
               DO;
                  SUBSTR(NEW_PIN,I,1) = '0';
                  J2 = J2 - 1;
               END;

            END;
            NEW_PIN = LEFT(NEW_PIN);
            RULE = 'RULE A2';
        END;

/* Rule A3:      left-justify Registry PIN, then replace any '01' prefix with
                 2 zeroes, then replace all leading zeroes by blanks, then
                 get rid of 00751 "suffix" (if present) and replace it by
                 blanks, and then, finally, left-justify the results */

   /*A3*/  WHEN(  751)
        DO;
            IF SUBSTR(LPIN,1,2) = '01' THEN
```

```
            SUBSTR(LPIN,1,2) = '00';

         J1 = 0;
         DO I = 1 TO 14 WHILE (J1 = 0);
            IF SUBSTR(LPIN,I,1) NOT = '0' THEN J1 = I;
            ELSE SUBSTR(LPIN,I,1) = ' ';
         END;

         I = INDEX(LPIN,'00751');
         IF I > 0 THEN DO;
              I1 = I + 5;
              IF I1 > 14 THEN;
              ELSE
              IF SUBSTR(LPIN,I1,1) = ' ' THEN;
              ELSE PUT // '*** ERROR. CARRIER = 751: ' PIN;
              SUBSTR(LPIN,I,5) = '     ';
         END;

            NEW_PIN=LEFT(LPIN);
            RULE = 'RULE A3';
      END;

/* Rule 4: Left-justify the Registry PIN and use the first 6 bytes for the
      new PIN */

   /* 4*/  WHEN(  780)
      DO;
        NEW_PIN = SUBSTR( LPIN,1,6) ;
        RULE = 'RULE  4';
      END;

/* Rule 14+A4:   Set the new PIN equal to all zeroes, then take a varying
                 number of characters which are right-justified in the
                 original number.  */

/*14+A4*/  WHEN(  820)
      DO;
         NEW_PIN = '0000000000';

         FLG = 0;
```

```
            J = NBLANK;
            DO I = 10 TO 1 BY -1 WHILE( NOT FLG);
               IF SUBSTR(PIN,J,1) NOT = ' ' THEN
               DO;
                  SUBSTR(NEW_PIN,I,1) = SUBSTR(PIN,J,1);
                  J = J - 1;
                  IF J = 0 THEN FLG = 1;
               END;
               ELSE LEAVE;
            END;
            NEW_PIN = LEFT(NEW_PIN);
            RULE = 'RULE 14+A4';
         END;

/* Rule A5:      Take a varying number of characters, up to 10, which are
                 right-justified in the original number.*/

   /*A5*/  WHEN(  825)
         DO;
            FLG = 0;
            J = NBLANK;
            DO I = 10 TO 1 BY -1 WHILE( NOT FLG);
               IF SUBSTR(PIN,J,1) NOT = ' ' THEN
               DO;
                  SUBSTR(NEW_PIN,I,1) = SUBSTR(PIN,J,1);
                  J = J - 1;
                  IF J = 0 THEN FLG = 1;
               END;
               ELSE LEAVE;
            END;
            NEW_PIN = LEFT(NEW_PIN);
            RULE = 'RULE A5';
         END;

/* Rule 12:      Left-justify and use bytes 6 through 14 */

   /*12*/  WHEN(  860)
         DO;
           NEW_PIN =  SUBSTR( LPIN,6,9) ;
```

```
            RULE = 'RULE 12';
          END;

/* Rule A6:      Take a varying number of characters, up to 6, which are
                 right-justified in the original number. */

   /*A6*/  WHEN(  951)
          DO;
              J = NBLANK;
              DO I = 10 TO 5 BY -1;
                 IF SUBSTR(PIN,J,1) NOT = ' ' THEN DO;
                    SUBSTR(NEW_PIN,I,1) = SUBSTR(PIN,J,1);
                    J = J - 1;
                 END;
                 ELSE LEAVE;
              END;
              NEW_PIN = LEFT(NEW_PIN);
              RULE = 'RULE A6';
          END;

/* Rule A8:      Left-justify and use first 10 bytes */

   /*A8*/  WHEN(14330)
          DO;
              NEW_PIN = SUBSTR(LPIN,1,10);
              RULE = 'RULE A8';
          END;

/* Rule 13:      Left-justify and use first 7 bytes */

   /*13*/  WHEN(16360,16510)
          DO;
            NEW_PIN =  SUBSTR( LPIN,1,7) ;
            RULE = 'RULE 13';
          END;

          OTHERWISE  FLC = 1;
    END; /* SELECT */
```

```
     RENAME PIN=OLD_PIN;
     IF FLC THEN OUTPUT ERROR;
     ELSE        OUTPUT WORK2.A;


*------------- Part B Rules ----------------------------;

DATA B;
     SET IN2.UPIN;
     IF CARRIER NOT IN (570,580,690,700,710,803,865,910,21200,
                        10072,10074 );

     IF CARRIER = 1390 THEN CARRIER = 932;
     INFORMAT NEW_PIN    $10.;

     NEW_PIN='          ';
     SELECT (CARRIER);

 /* For carrier 550, replace lead zeroes by blanks and left-justify */

           WHEN(550)
           DO;
               J1 = 0;
               DO I = 1 TO 10 WHILE (J1 = 0);
                  IF SUBSTR(P_PIN,I,1) NOT = '0' THEN J1 = I;
                  ELSE SUBSTR(P_PIN,I,1) = ' ';
               END;
               NEW_PIN = LEFT(P_PIN);
           END;

 /* Rule A3:      Replace any '01' prefix by 2 zeroes, then replace leading
                  zeroes by blanks and then left-justify */

    /*A3*/  WHEN(  751)
           DO;
               P_PIN = LEFT(P_PIN);
               IF SUBSTR(P_PIN,1,2) = '01' THEN
                  SUBSTR(P_PIN,1,2) = '00';

               J1 = 0;
```

```
            DO I = 1 TO 10 WHILE (J1 = 0);
               IF SUBSTR(P_PIN,I,1) NOT = '0' THEN J1 = I;
               ELSE SUBSTR(P_PIN,I,1) = ' ';
            END;
            NEW_PIN = LEFT(P_PIN);
         END;

         OTHERWISE NEW_PIN=P_PIN;
END;
```

APPENDIX B

CARRIER NAME AND CONTRACT CHANGES, 1992-96

APPENDIX B

CARRIER NAME AND CONTRACT CHANGES, 1992-96

Carrier Code	1992 Name	New Contractor or Alternate Name
00542	California BS	BC of CA - California Physician's Service
00570	Pennsylvania BS, DE	Xact Medicare Services - DE
00580	Pennsylvania BS, DC	Xact Medicare Services - DC
00621	Illinois BC/BS	Health Care Service Corporation - IL
00630	Indiana BC/BS	AdminaStar Federal of Indiana
00640	Iowa BS	IASD Health Services
00660	Kentucky BC/BS	AdminaStar of Kentucky
00700	Massachusetts BC/BS	C&S Administrative Services, MA
00720	Minnesota BC/BS*	Blue Cross and Blue Shield of Arkansas - MN
00825	North Dakota BC/BS, WY	Blue Cross & Blue Shield of Wyoming
00860	Pennsylvania BS, NJ	Xact Medicare Services - NJ
00870	Rhode Island Blue Shield*	MetraHealth - RI
00880	South Carolina BC/BS	Palmetto Government Benefits Administrators
05130	Equicor Life Assurance, ID*	Connecticut General Insurance Co. of N. America - ID
05440	Equicor Life Assurance, TN*	Connecticut General Insurance Co. of N. America - TN
05535	Prudential, NC*	Connecticut General Insurance Co. of N. America - NC
10230	Travelers Insurance Co., CT	MetraHealth - CT**
10240	Travelers Insurance Co., MN	MetraHealth - MN**
10250	Travelers Insurance Co., MS	MetraHealth - MS**
10490	Travelers Insurance Co., VA	MetraHealth - VA**
11260	Missouri General Am. , MO	General American Life Insurance Company
14330	Group Health Insurance, NY	Group Health Incorporated
16360	Nationwide Insurance Co., OH	Nationwide Mutual Company - OH

CARRIERS WHICH CHANGED NAMES AND/OR NUMBERS

Carrier Code	1992 Name	New Number	New Contractor or Alternate Name
00550	Colorado BC/BS	00824	Blue Cross & Blue Shield of Colorado
00690	Maryland Blue Shield	00901	Blue Cross & Blue Shield of Texas, Inc. - MD
00710	Michigan BC/BS	00623	Health Care Service Corporation - MI
00780	Massachusetts BC/BS, NH-VT	00780	C&S Administrative Services - VT
		00781	C&S Administrative Services - NH
00932	Washington Physician Service	01390	Aetna Life Insurance Company - WA

* Contract change as well as name change.

** MetraHealth purchased the Medicare Part B contracts from Travelers.

SOURCE: HCFA Intermediary and Carrier Directory (1/95), HCFA Part B Medicare Carriers Locality Codes (9/95), UPIN Location Address Finalist Report - Summary (9/96) and carrier interviews conducted by HER.

APPENDIX C

CONSOLIDATED CARRIER INTERVIEW NOTES

RESULTS OF ALABAMA BLUE CROSS BLUE SHIELD INTERVIEW

Medicare Provider File

1. Describe how you establish new physicians on your provider file.

   - Blue Cross and Blue Shield of Alabama approves a provider's application for participation under the Medicare program by verifying that new applicants are not sanctioned by OIG by checking the online sanctioned providers' listing. A copy of the state license is required.

   - They will also check monthly updates of hard copy reports sent by all boards. If a physician is not on the hard copy report, they will call the respective board for verification. They validate that all the required information is received. Alabama BC/BS stated that they have a good relationship with the license boards.

   - State license numbers vary in length. Depending on the board, a license may range from 4 to 6 characters.

   - All providers are treated the same.

2. Describe your policy and procedures for assigning provider identification number (PIN(s)).

   - One PIN is assigned per practice setting per payment locality. Radiologists and Pathologists, however, are assigned one PIN per payment locality because they are hospital-based and are constantly moving from hospital to hospital.

   - The PINs are not assigned by Tax ID or license number. There is no intelligence built into the number (with the exception of certain ranges identify groups).

   - It usually takes 10 days to assign a PIN, and up to 15 days for a UPIN (although they stated it is usually 5 days for a UPIN). PINs are manually assigned from a number sequence in a log book.

   - Physicians practicing in a group(s) are assigned additional PIN(s) per group. As of 1995, the PINs associated with a group were sent to the Registry.

3. Describe your policies and procedures for de-activating practice settings.

   - PINs are automatically deactivated if the PIN has been inactive for 24 months.

   - They may/may not re-issue the same PIN. If a physician moves his/her practice out-of-state then returns to the same location after the 24 months, they would be assigned the previous PIN. If the physician relocates after moving back, he/she would be assigned a different PIN. If a PIN is reissued, the provider is required to complete a

current enrollment application. License and sanction information is reverified prior to reinstating the original PIN.

4. Describe the PIN format.

   - Certain ranges may specify a certain type of provider specialty (for example, ambulance services are in the 50000 range). In general, most PINs are randomly assigned without any "built-in" specialty or location identifier.

   - Solo PINs are a 9 character numeric field, however, they zero fill the first four places. The last five places are the "core" number.

   - Group PINs are also a 9 character numeric field. Alabama BC/BS also assigns internal common pay numbers. The common pay numbers are 4 characters, starting with a C followed by 3 numeric digits. The common pay numbers are not transmitted to the Registry and a subsequent group UPIN is issued. The groups do not use the common pay numbers as a PIN to submit claims. Each provider within the group has a PIN for claims processing purposes.

   - There have been no changes to the PIN system since 1991.

5. Provider file maintenance.

   - Registry file is exact to the provider file.

   - Group surveys are sent once a year via a system generated letter. Any updates/changes to the provider file must be in writing. There are no up front edits in the system if information is keyed in inaccurately, however there is a management report generated after every change to the Provider file. Errors are rectified via this report.

   - Records are sent to the Registry twice a week, usually on Tuesday and Thursday. The UPIN coordinator reviews all additions and update transactions and reviews them for errors prior to releasing the record to the registry.

   - The PIN is justified automatically by the system when it is transmitted to the Registry. The system enters four zeroes before the five digit PIN followed by five zeroes (14 digits total).

Claims Processing

6. Describe claim processing.

   - Claims processing does interface with the provider file for hardcopy and EMC claims. For hardcopy claims, the claims examiner will key in the first three letters of the physicians name on the claim and perform a check to match the PIN on the claim to

the PIN in the provider file. The EMC system verifies that the PIN is a valid provider number contained on the PINs system. It matches the providers PIN to the specific biller number and if a match is not found, the claim is rejected back to the submitter on their EMC audit trail.

- If the PIN is missing on a claim, the claim would be denied.

- Eighty three percent of the claims submitted are electronic, the remainder are hardcopy. More than 95 percent of the claims submitted are assigned. Over 90 percent of the providers are participating.

- Within the standard system, all CPT codes have a specialty (or groups of specialties) assigned to them. This is a check to ensure the claim is sent by a qualified physician.

- UPINs are not matched to the names on the claims. Claims do not require the performing UPIN, however, referred services require the referring UPIN on the claim.

- Alabama BC/BS's system does have the capability to suspend claims submitted by high-volume physicians. All that they would have to do is enter the name of the physician and all claims submitted with that name would be suspended. They currently use certain CPT codes as a suspense edit.

- The performing physician's PIN is attached to each line item when a group claim is submitted.

- Providers have up to 18 months to submit a claim, however, after 12 months the provider is paid 10 percent less.

Provider File and Claims Processing Interface

7. Describe how your provider files interface with claims records.

- The provider file is not updated from the claim. Until 1990, the beneficiary file was updated from electronically submitted claims, but that practice has changed due to the high percentage of Medicare participating providers accepting assignment and the corresponding lack of incentive for them to maintain updated beneficiary addresses in their files. This update practice ceased on hardcopy claims upon receipt of HCFA instructions over a year ago.

- All claims go to the CWF, except for exact duplicate claims.

- They do not have a separate crosswalk file. If the UPIN is keyed into the system, it would be associated with all the PINs for that UPIN.

8. Updates to the medical care community.

- They send monthly Medicare publications to all providers.

Other Notes

- Alabama BC/BS stated that they could not send us a copy of their provider file screen due to proprietary restrictions on their software.

Tables

Table1. Analyses of State Licenses and Discrepancy Between Claim Data and Registry Dates

- Most of the provider records were sent in 1991 and are old records that have since been deleted. Some records were deactivated when they were sent to the Registry, but the Registry requested all the files from the carriers.

- Alabama BC/BS License boards are independent by provider specialty. Thus, multiple boards can use the same numeric license number. Some boards issue all numeric license numbers whereas other boards use a combination alphanumeric license. Alabama BC/BS sends the registry the official license number as issued by the board, so it could appear that a given license is associated with multiple UPINs.

- Transcription errors do occur when establishing a new provider file. Alabama BC/BS manually performs a random post quality assurance check on state license numbers before the information is submitted to the Registry.

- In the case of two UPINs per provider, the provider was added to the Registry file with different date of births and middle initials by two different carriers (Alabama BC/BS and Puerto Rico).

RESULTS OF ARKANSAS BC/BS INTERVIEW

Medicare Provider File

1. Describe how you establish new physicians on your provider file.

   - BC/BS of Arkansas verifies eligibility for the Medicare program by confirming on-line with the state license board for M.D.s and D.O.s. Psychologists must have documentation verifying they are degreed and if questionable the application is referred to the Medical Director.

   - Distinction between two physicians with the same name is determined using the PIN and UPIN.

   - A check of the state license is required, however, a copy of the license is not required. If a provider sends an application and Arkansas BC/BS does not have on-line capability, they will call the respective board to verify the license. They stated they have a good relationship with all the license boards.

   - State license numbers are 5 characters for M.D.s and D.O.s. All other provider licenses have 3-5 characters.

   - HMO providers have not yet applied but they would be treated in the same manner as any other provider.

   - Community Health clinics bill through Medicare Part A. According to Arkansas B-C/BS, these clinics include rural health clinics and mental health clinics.

2. Describe your policy and procedures for assigning provider identification number (PIN(s)).

   - One PIN is assigned per location within a payment locality if the provider requests payment to be made to each location. Otherwise, one PIN is assigned for each payment locality, regardless of the number of settings. PINs are randomly assigned via a manual log.

   - A physician's specialty is not built into the PIN.

   - There have been no significant changes to the PIN system since 1991.

   - Prior to 1992, the UPIN was manually loaded into the file; now they are automatically entered via the system.

3. Describe your policies and procedures for de-activating practice settings.

   - The provider file can be deactivated when the carrier receives handwritten information from the physician. It can also be deactivated from responses of letters sent by Arkansas BC/BS, returned mail, checking the state paper (Arkansas has one state paper), and through the Medical Board itself vis-à-vis on-line capability (M.D.s an D.O.s only). Arkansas BC/BS also subscribes to a quarterly newsletter from the Medical board which provides information regarding the status of providers.

   - A solo provider's PIN can be re-activated. A group PIN cannot be re-activated.

4. Describe the PIN format.

   - Individual providers and groups are assigned a 5 digit number. Individual physicians practicing in a group are assigned a 9 digit group number. This number is the individual PIN number plus the last 4 digits of the group number. The 9 digit group number is sent to the Registry and was sent prior to the issuance of group UPINs in 1995.

   - Group numbers always start with the number 5. CRNAs and Chiropractors are identified by provider number ranges.

   - A solo provider receives one 5 digit number. A nine digit number is given to the physician if: a.) he/she is practicing in a group, the first 5 digits are his core PIN and the last 4 are tied to the last 4 numbers of the group, b.) If the physician is a solo practitioner but wants additional numbers for additional office locations for payment purposes, the last 4 digits represent the different locations within the same payment locality.

   - A solo provider receives a 5 digit PIN even though he/she may only practice in a group. In this situation, claims activity would register under the nine digit number and there would be no activity under the 5 digit number.

   - The first Medicare HMO in the state just received approval.

5. Provider file maintenance.

   - The provider file is maintained by the provider personnel only.

   - Files are sent to the Registry once a week. These files are stored temporarily in the mainframe.

   - When a record is transmitted, a transmitted copy of OK status is sent to the carrier. If there are exceptions, the Registry will send an exception report. If more than a 10% rejection rate, the file cannot be submitted to Registry.

- The PIN-to-UPIN crosswalk is part of the provider file.

- PINs are not reformatted when transmitted to the Registry. License numbers are right justified preceded with zeroes.

- The files are maintained by provider personnel only. The system cannot edit a wrong license number. For example, if a new provider is loaded onto the system with the wrong license number the system accepts it. This initial error will be sent to the Registry and thus the potential for the same license number for more than one PIN.

- If adds or changes are made to the file, the system builds a record which goes into a holding pattern and is stored in the "Registry batch" in the main frame, downloaded to the PC, and sent to the Registry once a week (usually on Mondays).

- Arkansas does conduct a yearly update of their group files, although updates are done on a continuous basis by actively working their returned mail, feedback from the Medicare Participation Directory, and checking the state newspaper.

- Arkansas BC/BS mentioned there may be a problem with the definition of specialty. There is a difference between a specialty and what is practiced everyday. For example, a Board certified cardiologist does not practice internal medicine, however, internal medicine is considered his/her specialty.

Claims Processing

6. Describe claim processing.

- 82% of claims are submitted electronically. The remainder (18%) are sent hardcopy. They do not accept fax claims.

- Claims can be submitted from 15-27 months.

- Assigned claims are denied if the provider PIN is missing. Unassigned claims are developed.

- They do have a system that checks claims activity, however, it has not been used in some time. This activity is for purging providers on the Provider File for services as defined by HCFA.

- Surrogate UPINs are assigned if a provider is waiting for a UPIN to be assigned. A random sample review of surrogate UPINs is accomplished monthly.

- There is no system verification that the correct UPIN is being used. However, they do monitor the UPIN via a sample report.

- Claims examiner may/may not identify a wrong PIN submitted on a claim. Their

system does not match the PIN to the name.

- Reverse cross-overs are handled as exception claims.

- System does not check to see if the UPIN is matched to the correct provider.

- If a claim requiring a UPIN is submitted without a UPIN, CWF will send an alert. If the claim is assigned, is would be denied. If the claim is unassigned, the claim would be developed. Claim development begins with a system generated letter to the provider. If the provider has not responded to the letter in 30 days, the claim will be denied. If the provider notifies the carrier within 30 days, the CWF will be updated and the claim will be paid.

- When processing a claim from a physician in a group practice, the 9 character PIN is attached to each line item.

Provider File and Claims Processing Interface

7. Describe how your provider files interface with claims records.

- Their system does not have the ability to enter in the UPIN and get the provider number, but it can use the provider number to find other information. However, the system generates a monthly report via the provider file that links UPINs and all their associated PINs.

- Claims processing does interact with the provider file for claims processing information.

- Changes and updates to the provider file are immediately available to the claims processing system.

- The Utilization Review department has an established system to flag high-volume providers.

Other Notes

They were concerned with the NPI. The number built into the NPI does not signify a specialty, group, or solo provider.

Tables

Table 1. Analyses of State Licenses and Discrepancy Between Claim Data and Registry Date

- They do not have a system to detect transcription errors. This could explain the number of licenses associated with multiple UPINs.

- PIN 554037977 has no claims history and is deactive.

- If a physician is only practicing in a group practice, there will be no claims activity under the 5 digit PIN.

- Radiology clinics have been known to file all services under one or two individual physician numbers.

- Dr. moonlighting in hospital ER, has several PINs but may only using one for billing.

Table 2. Comparison of PIN Data Between Part B Claims and Registry Files

- Harold H. Hedges and Harold Hedges IV are two different individuals, father and son. There are several practice settings for Harold Hedges IV listed under the UPIN for Harold Hedges Sr. When the Registry was initially created, providers with the same or similar names were occasionally issued the same UPIN. When quality checks were performed by the Registry and carriers, problems such as this were identified and corrected. However, there are still a few incorrect practice settings shown for Harold Hedges Sr.

RESULTS OF CALIFORNIA BLUE SHIELD CARRIER INTERVIEW

Medicare Provider File

1. Describe how you establish new physicians on your provider file.

   - Cal BS will check to see if a new physician is sanctioned by the OIG (hardcopy report). A copy of state license is required.
   - State license checks are done according to monthly microfiche updates from the state license board. Cal BS noted they have a very good working relationship with all the license boards.
   - HMO physicians are treated in the same manner as any other physician.
   - If a physician has not submitted a claim (ordered or performed) in 3 years, the file is deactivated and an indicator is attached to the file.
   - Cal BS never deletes a provider file.
   - The state license field is 12 character long.

2. Describe your policy and procedures for assigning provider identification number (PIN(s)).

   - Individual (solo) physicians and group practices are assigned one PIN per practice setting (per each address), regardless of payment locality. Individual PINs usually begin with the prefix OOA, while group PINs usually begin with the prefixes XXX, YYY, or ZZZ. Currently, when a physician joins a group practice, he/she is assigned a distinct, internal PIN for each group practice he/she is associated with. This internal PIN begins with a "G" prefix and is transmitted to the Registry.
   - The individual to group numbering system (G number) was initially developed in 1994 in order to comply with the Expanded UPIN project and uniquely identify each individual to group practice setting. The final stages of this system were completed in early 1996.
   - CRNA, LCSW and non-MDs are assigned PINs from a log book containing numbers in sequence.

3. Describe your policies and procedures for deactivating practice settings.

   - Any deactivation must be in writing from the physician (or representative). Cal BS will place a D in the Provider file screen to notify the registry and will add an indicator to the file to deactivate.

- Cal BS does not reissue the same PIN to another physician.

- Previous to late 1993, Cal BS had their private business and Medicare combined. In late 1993, Cal BS split their business to form two separate systems. In 1994, an expanded UPIN project forced Cal BS to perform a major clean-up of their files. This 1994-195 UPIN project allowed all providers to get assigned a UPIN. This project increased the length of the UPIN from 6 to 10 characters.

- UPINs have a location identifier in the number.

4. Describe the PIN format.

- PINs are 9 characters in length for both solo and group practices. PINs are assigned by adding two (2) zeroes to the beginning of the license number and adding one (1) number to the end of the license number, e.g., license number A12345 would comprise the "core" of PIN 00A123450. A location indicator identifies the number of practices that an individual physician may have. If the person has more than one setting, the new PIN would be 00A123451, 00A123452, and so forth.

- State license numbers are used when assigning PIN numbers to Medical Doctors, Chiropractors, Podiatrists, Optometrists, Dentists, Psychologists, and Physician Assistants. All other providers are assigned a PIN from a sequential logbook.

- There have been no significant changes to the PIN system since 1991.

5. Provider file maintenance.

- The provider file is updated by physician responses to Cal BS mailings and letters sent by providers.

- Cal BS transmits (uploads and downloads) daily to the Registry. This system does have edits built into the system. For example, if Cal BS is sending information to obtain a UPIN but the physician already has a UPIN, the system will edit.

- Changes on Provider file are done on-line and take one cycle (overnight).

- While waiting for a UPIN to be assigned, a manual check is performed every day to ensure a UPIN is assigned within five days.

Claims Processing

8. Describe claim processing.

- 74% of all claims submitted are electronic claims. 2.5% are fax and the remainder (23.5%) are submitted on HCFA hardcopy 1500 forms.

- If an assigned claim is submitted (electronic and hardcopy) without a PIN or UPIN, the claim fails an edit system and is automatically denied. The edit system has mandatory fields required when submitting a claim - UPIN, PIN, CPT, Diagnosis code.

- There is no system to verify the PIN on the claim matches the name on the claim.

- There are no system edits to verify that the UPIN submitted on the claim is for the referring provider.

- Claims can be submitted up to 12 months from the date of service, prospectively and retrospectively. Will consider up to 18 months on an exception basis, however, the claim will be paid 10% less.

- The physicians individual PIN is attached to each line item when processing a claim for a physician in a group practice.

- The internal group number assigned to a physician practicing in a group is not used in claims processing.

Provider File and Claims Processing Interface

10. Describe how your provider files interface with claim records.

- They do not maintain a separate PIN-to-UPIN crosswalk The only fail-safe procedures are built into the system via required fields.

- The only matching that takes place is to check the PIN with the address on the claim. It does not check is the name is associated with the PIN or if the name is associated with the address.

- The system is not updated by information submitted on a claim.

- The UPIN is attached to the claim prior to going to CWF.

12. How long are claims held in suspense?

- Claims suspended for development (primarily non-assigned claims) are held 35 days for a response.

- All completed claims and many denied claims are transferred to the CWF. The CWF is a temporary file used to send files to NCH. Claims are sent from CWF back to the carrier for disposition.

Tables

Table 1. Multiple UPINs Associated With One State License Number

- Cal BS does not have two separate systems for assigning PINs. It does, however, assign PINs according to state license numbers.

- When asked how three UPINs could be associated with one license, Cal BS said it was because of the process in which the state license number is assigned. If three licenses are A12345, B12345, and C12345, there is a possibility that all three could be assigned the same state license number because of a transcription error. They did say that the Registry had a cross-check to make sure errors such as this did not occur.

Table 2. Comparison of PIN Data Between Part B Claims and Registry Files

- PIN 00G617850 was missing from the Registry because this physician was only involved in a group practice before the expanded UPIN project. During the UPIN project, Cal BS cleaned up their files and assigned PIN numbers for the individual to group practices relationship which begin with "G".

Table 3. Discrepancy Between Claims and Registry Dates

- California BS noted that the claims control numbers are not California BS numbers. The numbers presented belong to the other California carrier - Transamerica Occidental.

RESULTS OF C & S ADMINISTRATIVE SERVICES INTERVIEW

Medicare Provider File

1. Describe how you establish new physicians on your provider file.

   - New Medicare provider applications are added to the provider file as soon as they are received. A data entry person enters the information from the application to the provider file via one of six computer screens. If information is missing, the person will call the provider to obtain the missing information. The person double checks for errors, then the file is sent to a quality assurance person who rechecks the file.

   - Physician eligibility is verified by the state license number. A hardcopy of the license is required. If the state license hardcopy is not received, C&S verifies the license with the licensing board.

   - State license information is updated yearly and provided to C&S Administrative Services vis-à-vis diskette or hard copy. These files are matched to the carrier's provider file. If a provider is not matched to the license file, the provider is terminated from the system. C&S does not have an electronic on-line system to transfer data with the license board.

   - HMO Providers are given a PIN and treated like all other providers. HMO provider claim payment is made to the group. A new policy initiated by C&S Administrative Services is to de-activate the PIN if it has not been used in 1 year.

   - Community Health Clinic - number is given in group name and payment is made to the group.

2. Describe your policy and procedures for assigning provider identification number (PIN(s)).

   - C&S will issue multiple PINs to providers within a payment locality if the provider has multiple sites and requests additional PINs. Specialty does not affect PIN issuance.

   - For claims sent by a group of physicians, there has to be a PIN for each line item as well as a PIN for the group number. If the provider is a solo practitioner, the claim needs one PIN. An exception noted was community health clinics. For example, HCFA does not require a claim to have a PIN when beneficiaries receive flu shots at community health clinics.

   - Periodic surveys of group practices are infrequent. The last survey was completed about two years ago and was initiated by HCFA. C&S did note that during the past year, C&S has performed extensive data validation of the provider file.

- Provider practicing in group practice has his/her PIN attached to the Group number which is 6 digit. The claim payment is made to the group name/number.

- C&S distinguishes providers with the same name by referring to state license numbers, D.O.B., Tax ID#, PIN and location.

- Physicians can have multiple group numbers attached to his/her PIN.

3. Describe your policies and procedures for de-activating practice settings.

   - A deactivated PIN is never reissued to a different provider. If a PIN is deactivated, the provider must reapply and would be assigned the same PIN.

   - If the PIN is inactive for 12 months, contact is made to the provider (via phone call or letter) explaining that the PIN will be deactivated from the system unless C&S is notified within ten days of the contact.

   - A deactivated PIN is never reissued to another provider. It is reissued to the original provider if the provider notifies the carrier that they are still practicing.

   - There has been no changes to the PIN system since 1991. There have been enhancements to the Provider Enrollment System for tracking, maintenance and control purposes.

4. Describe the PIN format.

   - PINs are assigned based on the type of physician. For example, a new M.D. is assigned a six character PIN that begins with A20. This allows the PIN to distinguish between the type of physician; however, it does not distinguish between the type of setting (group or solo practice) or type of specialty.

5. Provider file maintenance.

   - Provider information is updated by one unit/person to ensure security. This includes changes to file via registry exception reports or via provider relations.

   - Low volume physicians (LVP) are more difficult to locate. Records for LVPs are updated when the new information is available. If an LVP does not submit a claim within 12 months, the PIN will be deactivated from the system. In that case, the provider will have to reapply to the Medicare Program and the PIN will be reactivated.

   - High volume physicians are determined by a statistical analysis of outliers. In some instances, these physicians are sent to Utilization Review. If there seems to be inconsistencies, the file is forwarded to the Fraud and Abuse Department.

- Any changes to the provider file by the provider must be made in writing by the provider or a representative of the provider.

- The PIN is left justified, 14 character alphanumeric field when transmitted to the Registry.

6. Procedures to ensure information on provider file is identical to that maintained on the Registry.

   - Provider enrollment on-line screen is designed to match the Registry's required fields. C&S does have some built-in measures in the computer system to ensure the information sent to the registry is accurate. For example, if a school code is "0010" and the clerk enters "R010", the system recognizes the invalid non-numeric character and that number would not be transmitted to the Registry. However, if a person entered a valid but incorrect school code, the error may or may not be detected by that person or a quality assurance person. For example, if the physician graduated from Harvard but the data entry person entered the code for Yale, "Yale University Medical School" would appear in a "window" as the school name. The clerk may or may not notice that the school names differ.

Claims Processing

7. Describe claim processing.

   - Electronically submitted claims must be handled within 14-17 days, or interest is paid to the provider. Currently, 82% of the claims handled by C&S are electronic. (82% is the average for MA, ME, NH, VT. Massachusetts is slightly higher).

   - Hard copy HCFA-1500 forms are sent to the ICR, which is maintained by EDS. This system scans the claim and saves the data to a high density optical disk. The claim must be typewritten or computer generated in order to be scanned. If the claim is handwritten, the information from the claim must be entered by hand. C&S has 30 days to make payment for services submitted on a hard copy.

   - Approximately 99% of the Massachusetts claims handled by C&S are assigned. 97% of the claims from the three other states are assigned. In rare cases, e.g., out of country claims, C&S uses a surrogate number (dummy PIN) for providers who send non-assigned claims and makes payment to the beneficiary.

   - Referring UPINs are required on claims, while the performing UPIN is <u>not</u> a required field on claims. Once the claim has passed claims processing, the performing UPIN is matched to the PIN via the provider file. The claim is paid according to the PIN number. Also, utilization review is performed using the PIN number. C&S does verify the PIN and referring UPIN to determine if the numbers are active and valid.

- In processing a claim from a physician or group practice, the rendering/performing PIN is attached to each line item.

- If the claim has a wrong Pin or no PIN on an electronic claim it is denied.
  If the claim has a wrong PIN or no PIN on ICR claim it suspends.
  If the claim has a wrong PIN or no PIN on manually submitted claims it suspends.
  Effective July 1, 1994, DME claims were processed at the DMERC. Previously, if it was a DME claim, a surrogate PIN was used and claim was paid to the beneficiary. Claims are held in suspense in accordance with HCFA guidelines.

- C&S noticed a problem with some claims submitted by ophthalmologists. Many providers were misinterpreting the billing procedures, thus many claims were submitted with wrong codes. In response, C&S developed a local Medicare policy for ophthalmology.

- All claims go through CWF. After subsequent follow-up, C&S stated that performing UPINs are not transmitted to CWF unless it is already attached to the claim (depending on the type of service).

Provider File and Claims Processing Interface

8. Describe how your provider files interface with claim records.

   - C&S does not have a separate PIN-to-UPIN crosswalk. Instead, the provider file links data by a system of computer generated screens.

   - Following HCFA guidelines, PIN are deleted from the Provider File if they have been inactive for three years.

   - Once the provider application is entered into the provider file, a PIN is assigned to the provider and the provider can submit claims to C&S. It takes about five days for the Registry to assign a UPIN. If the claim is submitted while the provider file is waiting for a UPIN, the claim is held in suspense until the UPIN is provided.

9. How long are claims held in suspense?

   - If a claim is submitted with missing or incorrect information, the claim is placed in suspense. All suspense claims requiring additional information or development are held for 45 days. If the additional information is received, the claim is processed according to HCFA quidelines. If the additional information is not received within 45 days, the claim is denied.

10. Describe notification channels and procedures to provide updates to the medical care community.

- Providers are updated quarterly by C&S with a general newsletter. C&S also send special notices to providers if it is deemed necessary.

Tables

Table 1. Multiple UPINs Associated With One State License Number

- In regards to multiple state license numbers, C&S stated that license boards in the state of Massachusetts issue the same numbers.

RESULTS OF AETNA (GEORGIA) INTERVIEW

Medicare Provider File

1. Describe how you establish new physicians on your provider file.

   - The application process is the same for solo as group physicians. The only difference is a box checked off on the application.

   - Physician eligibility is verified via the state license. License information is sent to Aetna via hard copy printout.

   - The state of Georgia has several licensing boards. Contact with the boards is initiated by Aetna. Aetna stated that they have a good working relationship with the M.D. board. Although Aetna is supposed to get yearly updates, they have not received an M.D. update since 1994.

   - Aetna has found the D.O. board and Non-physician boards to be extremely uncooperative. Aetna noted that these boards will only update two or three physicians at a time.

   - There are no HMO doctors (or HMOs) in Georgia. There are, however, Independent Physician Associations (IPAs) and Preferred Provider Organizations (PPOs), but to date physicians belonging to these organizations have not applied for a Medicare provider number. If they were to apply, Aetna would treat them the same as any other provider.

   - Infrequent billers (providers that have not billed Medicare in the past 18 months, e.g., retired providers) are flagged as a denial.

   - If a Community Health Clinic is federally funded, they cannot obtain a UPIN. If the clinic is not federally funded, it has to sign a reassignment form and the application process is identical as described above. The clinic is issued a group UPIN and the individual physician is issued a PIN.

2. Describe your policy and procedures for assigning provider identification number (PIN(s)).

   - PINs are assigned based on their Tax ID. When a new application is reviewed, the application goes through a cross-reference Tax ID check to make sure this provider does not already have a PIN. The cross-reference is a screen in the provider file.

   - Some physicians use their Social Security as their Tax ID, some use their actual Tax ID.

- The Group PIN is not transmitted to the Registry. The Registry uses the Tax ID to determine the Group PIN.

- The PIN assigning process is approximately 4-6 weeks. UPINs may take 1-7 days.

- An individual physician having two settings within the same locality is assigned one PIN (assuming the physician has the same Tax ID). If the physician had two Tax IDs within the same locality, he/she would be assigned two separate PINs. If the physician has two locations in two different localities, the physician would be issued two PINs.

- Aetna does not perform a group survey *per se*. Aetna does, however, perform its own random checks on a daily basis.

- Aetna would distinguish two providers with the same name by PIN, Tax ID, UPIN, and provider information (DOB, SS#, state license, and Medical School).

- Group physicians are assigned one PIN per Tax ID. Each group practice should have its own Tax ID, hence, the physician should have a different PIN for each group practice.

- Physician Assistants were assigned UPINs in October, 1994. Nurse Practitioners are in the process of being assigned UPINs.

3. Describe your policies and procedures for de-activating practice settings.

   - Practice settings are de-activated via letters from the provider, random sampling of inactivity on claims file for 18 months, or notification from the registry that physician is deceased or been sanctioned. If the provider is sanctioned, Aetna would investigate and contact the fraud department for action.

   - A number can only be re-activated if it hasn't been purged from the system. (4 years since last system purge)

4. Describe the PIN format.

   - Aetna replaced Prudential as Georgia's carrier seven years ago. This explains the two different styles and formats of PINs. Prudential used the physicians Social Security number with a letter attached at the end. Aetna's PIN format is seven characters and uses the physician specialty code as the first two characters and assigns consonants for the last five characters (e.g., 05BBBBB). The next PIN assigned for that specialty would be 05BBBBC.

   - Group numbers are 7 characters long, and start with GRP (e.g., GRP1234). Aetna uses the group tax ID number and an individual physicians' tax ID number to cross

reference to the group number and/or PIN. A payment/pricing locality field is completed for each PIN.

- There have not been any changes to the PIN system since 1991.

5. Provider file maintenance.

   - Any changes to the Provider file must be in writing. All updates onto the provider file are instantaneous - available to the claims processors immediately.

   - Provider file personnel are the only people that can update the provider file.

Claims Processing

6. Describe claim processing.

   - 77.43% of all claims are submitted electronically. The rest are submitted on hard copy.

   - When a claim is submitted by a physician in a group practice, the Tax ID is cross-referenced to the PIN and that PIN is used to process the claim.

   - Surrogate UPINs are allowed for claims processing if the PIN is on claim (physician is waiting to be assigned a UPIN).

   - Two providers can use the same surrogate UPIN e.g., OTH000. Aetna monitors use of surrogate UPINs.

   - If no PIN is on the electronically submitted claim the claim is denied.

   - If no PIN is on the hardcopy "assigned" claim, it is returned to the provider and deleted from the system.

   - Aetna's utilization review does have an established system to detect high volume physicians.

7. Describe practice and procedures impacting the accuracy and completeness of the referring UPIN on claims forwarded to HCFA.

   - For the majority of the claims there is no edit in the system to verify that the correct UPIN is used for the correct referring physician or performing physician. The only way to detect and correct errors is after the claim has been processed through an audit. However, in the case of a claim by a chiropractor who is given a different alpha in the UPIN from M.D.s it has potential for being detected.

Provider file and Claims Processing Interface

8. Describe how your provider files interface with claim records.

- They do not have a separate PIN-to-UPIN crosswalk. The only cross-check capability is through the provider file screens.
- The system is not updated by claims. As long as the PIN and UPIN are valid on the claim, then the claim will be processed and the system will not recognize an address change or name change. The system cannot determine which physicians have multiple UPINs.
- Data is transmitted to the Registry about 3 times a week (it varies according to the amount of information). Data can only be transmitted via one PC. PINs are left justified when transmitted to the Registry.
- When Aetna is transmitting data to the Registry, it may send 300 applications to the Registry but may only receive 295 UPINs. The only way Aetna would know which five were missing in the transmission would be if the physician called and asked about his/her UPIN.
- Providers have 18 months to submit a claim. This includes 18 months retrospective from the date of the UPIN issuance.
- Claims from a provider in a group practice: prior to the implementation of the group UPIN only the PIN was sent to the registry. The claim is processed with the individual PIN and the group's tax ID number. All claims go through the CWF except; duplicate denials, transfers, and verified eligibility.

Tables

Table 1. Multiple UPINs With One State License Number

- The license number 000000000999 was a dummy variable that was used to process claims. This number is no longer used (it was used until 1991).
- Incorrect spelling of a providers name allowed for error in assigning additional UPIN. There is no system to detect transcription errors.

Table 2. PIN Data Comparison Between Claims and Registry Files

- The Registry does not purge any information from its system. This explains why PINs are located in the Registry but not in the Part B claims. According to Aetna, the deactivated PIN status should show in the Registry file.

- In the case of multiple UPINs per physician, Aetna stated that if there was a transcription error, their system could not detect it. The Registry, however, should have a cross-check that would detect any errors.

- No explanation why the PIN in the Registry was not in the Part B claims.

Table 3. Discrepancy Between Claim and Registry Dates

- Claims can be submitted up to 18 months after the date of service and Aetna will process claim retroactive 18 months prior to effective date of providers participation with Medicare.

RESULTS OF METRAHEALTH (MISSISSIPPI) INTERVIEW

Medicare Provider File

1. Describe how you establish new physicians on your provider file.

   - MetraHealth verifies a providers eligibility for the Medicare program on an exception basis. They take the information submitted on the application at face value. The only check they make is to confirm that the provider is not on the sanction list provided by the Office of Inspector General.

   - A hard copy of a provider's state license is not required. The exceptions are made for: chiropractors, they must submit a letter from the state board of health; certified nurse anesthetists, they must submit copy of state certification, LCSWs and physical therapists all must have confirmation of certification.

   - State license numbers are 5 digits for MDs and DOs - 3 digit for chiropractors, optometrists. Nursing license number starts with R+4/5 digits. The state license number field holds up to 12 characters and are left justified by the system, if they zero fill it would be to the right.

   - HMO physicians have not applied as of yet, though they would be treated the same as any other provider. A new HMO is scheduled to start operations sometime in the near future.

   - Community Health Clinics receive a base clinic record (group number). This number is assigned in sequence from a log book. It is an 8 character length beginning with a C then 5 digits followed by a 2 character number to identify specialty. The same process is followed for group practices.

   - Providers having the same name would be differentiated by license number, D.O.B., and social security number.

   - Within the last three months, the license number is used to assign PINs to nurses. Previously, nurses were assigned PINs according to their certification number.

2. Describe your policy and procedures for assigning provider identification number (PIN(s)).

   - A group practice receives one group number per payment locality regardless of multiple office locations within that locality. A group is established with an original address and payment goes to that address. If additional locations bill, the additional address may or may not be added to the provider screen for informational use in claims processing. (This is added to a free form section of the provider file).

- A solo provider receives one PIN per payment locality regardless of multiple office locations within that locality. The system assigns the 9 character number with the first 2 digits signifying the specialty.

- Group practice updates were conducted via their system up until a year ago when HCFA no longer required it.

3. Describe your policies and procedures for de-activating practice settings.

   - De-activating practice settings: Returned mail is one way to prompt deactivation of a providers PIN. Notification from registry about a deceased provider, physician responses to letters and requests from physicians in writing are others ways to de-activate a practice setting.

   - If there are no claims received within 2 years, the PIN will be de-activated. This system deactivation check is done every 2 years. If a provider has been sanctioned, a letter has been received from OIG and the provider file would be flagged, a date entered to effect status, sanction code identified which will allow the claim to kick out and be sent to the fraud department for investigation.

   - There have been no significant changes to the PIN since 1991.

   - A de-activated PIN is not assigned to a different provider, however, it may or may not be reissued to the same provider. For example, if a physician moves, has his/her PIN deactivated, decides to return with a new specialty, he/she may be issued a new PIN or re-issued their old PIN. The responsibility of re-assigning a PIN is delegated to the person maintaining the provider file.

4. Describe the PIN format.

   - A physician practicing with a group receives a PIN for each group he/she is with. It is a 9 character number beginning with his/her specialty (2 digits) The next seven digits are sequential. For example, if a physician practiced with group C0021317, the individual PIN might be 080021317.

   - The system assigns PIN numbers, with the exception of hospital-based physicians. A hospital-based physician receives a manually assigned 9 character number - first 2 characters signify specialty, a 260-263 in the 4th-6th characters signify hospital based (e.g., 930261832).

5. Provider file maintenance.

   - Changes and updates to the provider file are immediate and available to the claims processors when the data has been entered. The provider file screen is used to enter all provider information that is transmitted to the registry. Required registry information is recorded in required fields and the system performs all edits if required information is not entered.

6. Describe procedures to detect and rectify errors and inconsistencies - especially data elements required for the Registry.

   - MetraHealth will make a hard copy printout of the record sent to the Registry in the event there is a transmission problem. If there is a problem, a manual check of the printout is performed 2-3 days later.

   - The PIN is left justified when transmitted to the Registry.

7. Procedures to ensure information on provider file is identical to that maintained on the Registry.

   - In 1989, HCFA requested all provider files to be sent to the registry. MetraHealth sent all records including deactivated records. The registry assigned UPINs to the deactivated providers. The results were a list of UPINs not matching Registry UPINs. And their current system which now requires D.O.B., medical school can't accept changes without this information. They must manually delete these files and send to registry.

   - Another error that may occur with the registry is duplicate records - MetraHealth is sending an add to the file, requesting a UPIN - the registry is reading it as an update and saying can't update a file that doesn't exist. This occurs when MetraHealth does not receive confirmation of a transmission and keys in a code to make sure the transmission was accepted. According to a Registry worker, this code may be interpreted as a duplicate submission.

   - MetraHealth's Data Processing/System main frame is in Hartford, CT. and there are programmers in Augusta, GA.

   - MetraHealth transmits information to the Registry daily. MetraHealth will send its information to the MetraHealth main frame (Hartford, CT), which sends it back to MetraHealth where the information is downloaded to a PC. The PC then uploads that information to the Registry. Required fields that are transmitted to the Registry are attached.

- Group PINs are sent to the Registry and were sent prior to the issuance of group UPINs in 1995.

- If a solo physician has multiple practice settings within the same locality and uses one Tax ID number, each practice setting address is kept on a "free-form" section of the provider file. The only address sent to the Registry is the one associated with the PIN (usually the billing address).

Claims Processing:

8. Describe claim processing.

- MetraHealth has about 80 % of their claims electronically submitted, 20% hard copy.

- Claims submission: claims can be submitted up to 18-27 months from the date of service. And claims will be honored retroactively- prior to the effective date of a provider receiving a PIN.

- There is no verification of UPIN to PIN via claims entry.

- If there is no PIN submitted on the claim, an exception report is generated and the claim is developed, call made to the provider, if no response, control number is deleted and claim is returned. They must have a PIN entered into their system in order to deny the claim. The claims examiner can try and locate PIN on the system by using the tax ID number as a search, if the tax id is listed on the claim.

- Surrogate PIN - surrogate PINs are only used in the case of a non-assigned claim. The claim is held in suspense for 45 days, an application is sent to the provider, if no response a surrogate PIN number is used for non-participating provider.

- UPINs are only required on claims when it is necessary to include a referring provider, such as diagnostic services and laboratory services. If the UPIN is not on the claim it is denied. A surrogate UPIN can be used in the case a provider is awaiting a UPIN assignment. There is a report generated to monitor the use of the surrogate UPIN.

- In processing a claim from a physician in a group practice, the performing (individual) PIN is attached to each line item.

- MetraHealth has two departments to determine high volume providers. Focus Medical Review investigates higher-than-average claim submissions among peer groups (specialty) within the state of Mississippi. Comprehensive Medical Review involves any provider who has submitted twice as many claims as the national average.

Provider File and Claims Processing Interface

9. Describe how your provider files interface with claim records.

- There is no separate electronic PIN to UPIN crosswalk file. Information can be checked on the PA screen. There is a "look up key" field on the screen. You can key in the UPIN and it will give you all the PINs for that provider.
- The claims system cannot update the provider file. Any changes triggered by a claim are forwarded to the provider unit and designated staff update the provider file.
- When the UPIN was implemented, the state license board gave MetraHealth a list to verify all state license numbers.
- The only edit check on a UPIN is if there are not enough digits or if the provider is sanctioned. In these cases, the system will flag as an exception.

10. Describe procedures to maintain consistency of information between the provider file and claims.

- PINs would get verified on a group claim. The individual PIN for group practicing provider has the number tied to the group clinic code.
- All claims go through the CWF.

Tables

Table 1. Multiple UPINs With One State License Number

- UPIN C48127 belongs to PIN 080000400.
- Hugh Barnes - 012798983 has been inactive since January 1988. Drip status shows P.
- Andrew Carroll - inactive since July 1989, last change in file record was July 1989. Drip status shows P.
- As of the years of our data analysis, there has been a manual check of many files. For example, PIN 161616812 is now associated with a different state license number.
- The change in status was manually operated from 1988 to approximately 1993. In 1993, status changes were automatically made by the system. The discrepancies on Table 1 could be the result of clerical error. The system does not verify state license number to the provider name. MetraHealth has not purged their system and

therefore can access old file information on a provider, which is why they knew drip status.

Table 2. PIN Data Comparison Between Claims and Registry Files

- The line items showing no claims activity are for inactive providers. Most of the providers were deactivated in 1989-91, when changes were manually done. They are still showing in Registry. Some of the inactive providers were hospital based physicians who probably left hospital and did not inform the carrier.

- 993000001A - this PIN is assigned to a pre-payment plan/group practice, Metropolitan Life Insurance - they do not get loaded onto the Registry file. The claim is sent in for services rendered by a Medicare provider who is not part of the managed care group (out of plan claim for this beneficiary). The claim is processed under the rendering providers name. For pricing purposes, the PIN (93000001A) is "erased" prior to payment which is made to the pre-payment plan. They do not see many of these claims.

Table 3. Discrepancy Between Claim and Registry Dates

- Welch: 261261615, this PIN is still active, drip status is wrong. Hospital based physician.

- Claims can be submitted, up to 18-27 months, for payment of service dates prior to the effective date of practice setting/PIN.

RESULTS OF XACT MEDICARE SERVICES (PENNSYLVANIA) INTERVIEW

Medicare Provider File

1. Describe how you establish new physicians on your provider file.

   - Exact Medicare Services (Pennsylvania) verifies a provider's eligibility for the Medicare program by ensuring that all the required information requested on the application is complete. The state license number is verified by reviewing a tape of valid state licenses from the license board. If there is no license listed on the application, the provider is contacted to request the information. Tapes from the license board are sent quarterly and contain information from all the boards.

   - They noted they have a good working relationship with the Pennsylvania state license board (They are also the carrier for Delaware, New Jersey, and District of Columbia, and they have found these boards to be less cooperative). The Pennsylvania state license board does not allow 'on-line' linkage.

   - Xact Medicare Services does not verify that the information on the application is correct before it is entered into the system. They do, however, perform two checks when an application is submitted. The first check is a system edit check to verify the license number has the correct number of fields. The second check is a manual (back-end) check to verify that the information on the application matches the provider file. With the exception of this manual check, they do not have a system to detect transcription errors.

   - The system cannot verify that the correct license is associated with the correct name, it only edits for length of number. Pennsylvania state license numbers are 7 characters - 2 alpha and 5 numeric.

   - They would distinguish providers having the same name by date of birth, social security number, provider number(s) and license number.

   - HMO providers are treated the same as any other provider.

2. Describe your policy and procedures for assigning provider identification number (PIN(s)).

   - Each provider is set up with a provider number (PIN). He/she receives one PIN per payment locality regardless of the number of office settings. If the provider is affiliated with a group practice, his individual provider number is tied to that group number and sent to the Registry as an additional setting.

   - PINs are computer generated using a sequential numbering system. There is no intelligence built into the number.

- Community Health clinics are not defined in their system as a separate entity.

- Solo PINs are reused and reissued to different providers. These PINs are assigned 6 months after the de-activation date. Group numbers are not reissued, the number is deactivated and purged.

- It takes 2-5 days to assign a PIN. UPINs may take up to 2 weeks, but as few as 5 days.

3. Describe your policies and procedures for de-activating practice settings.

- If a provider is not affiliated with a group and has not submitted a claim within 3 years, that PIN will be deactivated and purged from the system. If a group dissolves, the PIN will be purged. If a practitioner is deceased or retired for more than 2 years, the system will purge his/her number the next year (3 years total).

- When a solo practice is deactivated, a single record is sent to the Registry. If a provider is affiliated with a group and he leaves the group, the additional setting record is sent as a deactivated record. Two records are sent if Xact Medicare Services is deactivating the solo practice and group practice at the same time.

4. Describe the PIN format.

- The PIN format is based on a 6 digit provider number that is generated by the system. There are ranges of numbers assigned for suppliers (200,000), laboratory and hospitals (300,000), and electronic source numbers (49,91,99) used for submission of claims. The field is a 14 character length number. The core PIN is 8 zeros followed by the 6 digit PIN for individuals, suppliers or groups.

- If a solo provider is also practicing with a group, the PIN format is zero and the 6 digit group number followed by zero and 6 digit individual PIN. Currently, the group PIN is sent to the Registry when a member is added or deleted to a group.

- PINs are right justified and zero filled when sent to the Registry.

- Group UPINs start with a W. One problem Xact Medicare services noted was that sometimes the Registry will assign a group practice with a solo UPIN. The registry verifies information sent by the carrier with AMA information.

5. Provider file maintenance.

- Provider file maintenance is done daily as requested by the provider (in writing). If an update changes any of the UPIN data elements, an update record will be sent to the Registry. Retired physicians are set up as inactive and are deactivated if no activity for 3 years. Any changes to the provider file go through an overnight system cycle.

6. Procedures to detect and rectify errors and inconsistencies

   - Exception records from the Registry identify errors or inconsistencies of data elements. The error report is placed in the system with error codes and a printout is generated and worked manually. The Registry has issued multiple UPINs; for example, the registry was issuing the wrong series of numbers for group UPINs, group UPINs start with W. Name errors - the carrier records the name as listed on the license records - if the registry returns record with name error carrier has flexibility to keep license record name.

   - Records are transmitted to the Registry daily. UPINs are issued within 1-2 weeks. They do know how many records were accepted or need correction for each daily transmittal.

   - There have been no changes to the PIN system since 1991.

7. Procedures to verify that the information on the provider file is identical to the Physician Registry

   - File comparisons (Xact Medicare Services requests a complete tape of MPIER file from the Registry to perform an exception comparison) are done between their masterfile and the MPIER files as needed.

   - If a solo or group physician has multiple practice settings within the same locality and uses one Tax ID number, the only practice setting address sent to the Registry is the one associated with the PIN (usually the billing address).

Claims Processing

8. Describe claim processing.

   - 75% of claims are submitted electronically. The remainder (25%) are sent hard copy. They do not accept fax claims.

   - If there is no PIN of the claim (emc or hardcopy), the claim will be denied. If there is no referring UPIN (on claims where it is required), the claim is also denied.

   - Group claims are processed using both group payment number and provider number. Payment is made according to the group number. The PIN attached to each line item equates to the performing physician for that service.

   - There is no separate UPIN-to-PIN crosswalk file. The UPIN-to-PIN crosswalk is accessed through the provider file. They do have the capability to enter the UPIN to find associated PIN(s).

- Claims processing does not verify the PIN or UPIN is the actual provider. The only check is to determine the PIN and UPIN are the correct format.

- Providers can submit claims up to 27 months, however, claims must be submitted within 12 months to receive 100% payment. If a claim is submitted after 12 months, payment is reduced 10%. Electronic claims must be processed within 15 days.

- The Utilization Review department generates reports for high-volume providers and/or aberrant billers based on procedure codes.

- Providers who submit claims electronically are assigned an electronic source number. If this number is not attached to an emc claim, the claim will not enter the claims processing department.

9. Claims in suspense.

- Non-assigned claims are "developed" in order to process the claim. Assigned claims could be "developed" if certain fields are missing from the claim (e.g., insurance type, wrong CPT code). A person from the claims processing department would call or send a letter to the provider to verify any missing or incorrect information. The provider has 45 days to respond to the letter or the claim would be denied.

10. Updates to the medical care community

- Xact Medicare Services sends an annual group mailing to update the provider file. Currently, there is no mailing to solo practitioners.

Other Notes

Due to a Medicare Mandate that was recently enforced, Xact Medicare Services will be converting to the GTE shared system instead of the Pennsylvania Blue Shield Part B system in August, 1996.

Tables

Table 1. Multiple UPINs Associated With One State License Number

- Xact Medicare Services does not have a system to detect transcription errors, which was the explanation regarding the large number of inconsistencies with multiple UPINs per state license number.

Table 2. Comparison of PIN Data Between Part B Claims and Registry Files

- PINs may be deactivated and purged from their system, explaining how PINs could be located in the Registry but not in the Part B claims.

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- PIN 000137601 belongs to a hospital-based physician. Although it was noted that they treat hospital-based physicians the same as any other physician, this may be a case where the provider should have billed through Medicare Part A.

- PINs located in the Registry file have the same extension (last seven digits) for each UPIN. The last seven digits are the individual number, the first seven refer to the group number.